INDEX OF SUBJECTS.

ABSTRACTS, 1892.

And also to Transactions, 1892 (marked Trans.); and to such papers as appeared in the Proceedings during the Session 1891-1892 (Nos. 101 to 114; Nov., 1891, to July, 1892), but not in Transactions (marked Proc.).

Α.

Absinthin, from Artemisia absinthum, 1240. Absorbent power of coloured salts and electrolytic dissociation, 757. Absorption and digestion of fat oils by plants, 1118. --- coefficients of gases, 1043. — of gases by liquids, 556. - spectra of thin metallic films, 1037. - without osmosis, 646. Acenaphthalide, ortho- and para-nitroa-, action of bromine on a mixture of, Proc., **1891**, 186. Acenaphthene, oxidation of, 863. Acenaphthenequinone, 864. Acetal, amido-, preparation of, 1327. Acetaldehyde, action of zine and ethyl chloracetate on, 1300.

Acetaldehydeaniline, 1191. Acetaldoxime, 951. - action of hydrocyanic acid on,

- condensation of, with aniline,

- preparation of, Trans., 473. Acetaldoximes, existence of two crystalline, Trans., 470; Proc., 1892,

Acetalylcarbamide, 1327.

1191.

Acetalylmetaxylylthiocarbamide, 1329. Acetalyl-a-naphthylthiocarbamide,

Acetalylparatolylthiocarbamide, 1328. Acetamide, brom-, 827.

Acetamidine nitrite, 53.

- picrate, 705.

Acetamidobenzylacetanilide, ortho-, 81. Acetamidocarbazole, 616.

Acetamidonitrosocarbazole, 616. Acetamidophenylsulphonepropionic acid and its halogen derivatives, 1090.

Acetamidotolyloxamethane, 599. Acetamidotolylurethane, 1203.

Acetanhydrocitric acid, TRANS., 1003.

— action of aniline on, TRANS., 1006.

- conversion of, into aconitic acid, Trans., 1007.

Acetanilide, nitrodibromo-, 1205. Acetanilidobutyric acid, 1338. Acetanilidoisobutyric acid, β-, 1339.

lactone, 1339.

Acetenyltrimethylammonium hydroxide, 905.

- salts, 807.

Acetic acid, heats of combustion and formation of, 1139.

– ---- oximido-, 699.

- - production of, from cellulose, 1421.

- fluoride, 1068, 1069. – sulphide, 300, 581.

 Λ cetimido- β -chlorethyl ether, 1332.

Acetoacetanilide, 708. Acetoacetic acid, phenylhydrazine salt

of the hydrazone of, 162. Acetoacrylic acid, diiodo-, 1179.

- perchloro-β-, 1186.

- oxime, 1179.

Acetodiketohexamethylenedicarboxylic acid, 586.

Acetoisobutyl alcohol, TRANS., 71.
——bromide, TRANS., 72.

Acetoisobutyric acid, β -, derivatives of,

Acetoxydichloropyridone, 449.

Aceto-xylide, parachlorometa-, 1202.

Acetoxytetramethylenecarboxylic acid,

Acetol ethyl ether, 954. Acetomesitylene action of hydroxylamine hydrochloride on, 314. Acetonaphthalide, α-, physiological action of, 366. Acetonaphthalide, \$\beta\$-, 4:1-bromiodo-, TRANS., 767. - 1:4-chlorobromo-, Trans., 768. Acetone, chlor-, 1425. detection of, 1032. --- diamido-, 952. - hydrazone, Trans., 787. symmetrical dichloro-, preparation of, 952. - thiocyan-, 1425, 1426. Acetonediacetic acid, 432. Acetonedicarboxylic acid, action diazobenzene on, 161. - action of phenylhydrazine on, 162. - reduction of, 147. Acetonedisazobenzene, 710. Acetoneresorcinol, 1312. Acetonitrile, di- and tri-chloro-, polymerides of, 1291. Acetophenone mercuric chloride, 829. sodium derivative of, 170. Acetophenonethiophenylhydrazone, Acetopiperone, 873. Acetoprotocatechone, 61. Acetothienone mercuric chloride, 829. Acetothienoneoxalic acid, 154. oxime of, 304. Acetothiosulphuric acid, salts of, 1419. Acetotoluidide, meta-, parabromo-, - ---- parachloro-, 1201. Acetotoluidide, ortho-, action of sulphuryl chloride on, TRANS., 1042. derivatives of, 838. nitrobromo-, 1207. Acetotoluidide, para-, action of sulphuryl chloride on, Trans., 1042. - — 2:6-dibromo-, 175. - — metachloro-, 450. — 6:3-nitrochloro-, 173. Acetovanillone, 59. - derivatives of, 61. - synthesis of, from guaiacol and acetic acid, 61. Acetovanillonephenylhydrazine, 61. Acetoveratrone, 61. Acetoxime, action of diazobenzene on, 1080. action of hydrocyanic acid on, Acetoxime- β -naphthylsulphone. 334. Acetoximeparatolylsulphone, 334.

Trans., 45. Acetyl, magnetic rotation of substances supposed to contain, TRANS., Acetyl-α-acetaldoxime, Proc., 1892, 136. Acetylacetone, magnetic rotation of, Trans., 813, 840, 844. refractive and dispersive powers of, Trans., 846. Acetylacrylic acid, dibromo-, 302. trichloro-, action of hydroxylamine on, 1203. Acetylamidogu midine salts, 1297. A cetylamidoisophthalic acid, 1464. Acetylbenzamide, 982. Acetylbenzeneazoacetone, 977. Acetylbenzenehydrazo-orthocresol, 975. Acetylbenzovlmethyl cyanide, 451. Acetylbenzylmetaxylidine, 1320. Acetylbenzylorthotoluidine, 48. Acetylbutylchloraldoxime, 34. Acetylcampherylphenylhydrazine, 1481. Acetylchlorantiglyoxime, 694. Acetylchlorophenols, isomeric, 308. Acetyldinitrocarvacrol, 309. Acetyldiorthotolylhydrazine, 843. Acetyldiparatolylhydrazine, 844. Acetyldiphenylhydrazine, 710, 843. Acetylene, formation of, from bromoform, 421. formation of, in the interior of a luminous flame, TRANS., 325. — higher homologues of, 1163. - metallic derivatives of, Proc., 1892, 109. - origin of, in flames, Proc., 1892, silver and copper compounds of, 1416. Acetylenedicarboxylic acid, diiodo-, 431. Acetylenic hydrocarbons, action of organic acids on, 1064. Acetyl- β -ethylthiophen, 830. Acetylfenchylamine, 123). Acetylfluorescin, 1319. Acetylglycerol, dichloro-, 289. Acetylguvacine, 740. Acetylhydrindigotin, 480. Acetylhydroximidoacetonitrile, 816. Acetylindigotin, 480. Acetylisoeugenol, 46. Acetylmetachlorobenzeneazoparacresol, Acetylmetachlorobenzenehydrazoparacresol, 975.Acetylmethylphenyltetrahydroquinazoline, 81. 5 0

Acetoximephenylsulphone, 334.

physiological action of, 1506.

Acetyl- β -methylthiophen, 830. — bromo-, 830. Acetylmethyltriniethylenecarboxylic acid, oxime of, TRANS., 70. - preparation of, TRANS., 69. Acetyl-\(\beta\)-naphthylglycocine, 1342. Acetyl-a-naphthylhydrazine, 509. Acetyl-a-naphthylthiocarbizine, 510. Acetylnicotenylamidoxime, 207. Acetylorthohomoparahydroxybenzonitrile, 320. Acetylorthotolylglycocine, 1334. Acetylorthotolylhydrazine, 843. Acetylortho-xylene, 1:2:4-, production of, from camphor, PROC., 1892, 54. Acetylpæonol, 59. 845. Acetylparabromodiphenylhydrazine, Acetylparabromophenylhydrazine, 982. Acetylparachlorobenzeneazoparacresol, Acetylparachlorobenzenehydrazoparacresol, 974. Acetylparachlorothiophenol, 308. Acetylparethoxyphenylhydrazine, 1081. Acetylparahomosalicenylamidoxime, Acetylparahomosalicylonitrile, 318. Acetylparatolueneazoparacresol 974. Acetylparatolylglycocine toluidide, chlor., 1336. Acetylparatolylhydrazine, 844. Acetylphenoldisazotoluene, 976. Acetylphenoxyethane, aa'-, 811. Acetylphenylhydrazine, chlor-, 844. Acetylphenylmethylhydroisopyrazolone, 635. Acetylpropionyl, preparation of, 426. Acetylquinaldine, para-, 1488. Acetyltetrachlorocrotonic acid, dichloro-, 1462. -- trichloro-, 1463. Acetylthiocarbimide and aldehydeammonia, Trans., 530. Acetylvanillonitrile, 318. Acherontia atropos, blood of, 648. Acid amides, mixed, 982. Acids, affinity coefficients of, 1269.

on, 38.

of, 395, 1140.

salts of, 1301.

of, 37, 293, 811.

electrical conductivities, 2.

bibasic organic, thermochemistry

action of, on olefines, 1162.

- dry distillation of silver salts

Acids, fatty, estimation of resin in admixture with, 389, 546. higher, action of bromine on, 695. - polybasic, synthesis of, 41. free, estimation of, 539. - in spirits, estimation of, 387. influence of, on the velocity of the hydrolytic action of yeast, TRANS., 940. - isodynamic, Proc., 1892, 103. - ketonic, behaviour of, towards sodium hydrogen sulphite, 148. mechanical determination of the boiling points of, 1039. monobasic, existence of acid or basic salts of, in very dilute solution, - polybasic, electrolytic conductivity of, 1145. - of butter, 1113. --- organic, affinity-coefficients of, and their relation to chemical constitution, determination of the affinity of, 37. dissociation constants of, TRANS., 696. influence of boric acid on the electrical conductivity of aqueous solutions of, 257, 1265. standard, use of potassium hydrogen tartrate for titrating, 525. unsaturated, 812, 956. conversion of, into their stereochemical isomerides by soda, decomposition of the dibromides of, by warm water and dilute alkalis, 959. - oxidation of, 956. velocity of reaction in mixtures of isohydric and non-isohydric solutions of, 936. Acidyl sulphides, 300, 581. Acouine, Trans., 393. - action of methyl iodide on, Trans... 403. amido-, action of hydriodic acid conversion of, into aconitine, TRANS., 401. and bases, study of the chemical - crystalline salts of, TRANS., 399. neutralisation of, by means of their - decomposition products of, TRANS., - astringent, estimation of, in wine, distillation of, with baryta, 1255. hydrochloride, crystalline, pre-paration of, Trans., 397. properties of, TRANS., 400. - fatty, action of iodine on the silver Aconite, alkaloids of, TRANS., 385, 395. preparations, assay of, 392. Aconitic acid, anhydro-derivatives of,

TRANS., 1003.

Aconitic acid, conversion of acetanhydrocitric acid into, TRANS., 1007.

- dissociation constant of, TRANS., 707.

— anhydride, Trans., 1009.

--- action of ammonia on, Trans., 1010.

Aconitine, 1254, TRANS., 390.

- conversion of aconine into, Trans., 401.

- hydrolysis of, Trans., 396.

- methiodide, Trans., 403.

---- methohydroxide, Trans., 404.

— reaction for, 756.

Aconitum napellus, alkaloïds of true, TRANS., 385.

Acridine, homologues of, 342.

Acridinemethylium hydroxide, 881.

Acridine-series, action of alkalis on the alkyl iodides of, 879.

Acridone, 1086.

derivatives of, 1223.

Acridonesulphonic acid, 3-, 1223.

Acrylic acid, diiodo-, 431.

Action at a distance, 956, 1149.

- - of aqueous solutions on water vapour, 936.

Adenine, 219, 220, 890.

bromination of, 221, 890.

--- bromo-, 890.

Affinity coefficients of acids, 1269.

- of alkyl bromides and iodides,

- of organic acids and their relation to chemical constitution,

 of organic acids, determination of, 37.

- residual chemical, theory of, as an explanation of the physical nature of solutions, 559.

Agrostemma githago, sapotoxin from,

Air vitiated by respiration, 1502.

Albumin, ash free, 645.

decomposition of, 515.

--- detection of, in urine, 667, 928.

— egg, crystalline, 515.

- formation of furfuraldehyde from, 1433

— new, from protoplasm, 86.

- oxidation of, in presence of sulphur, 741.

Albumins, transformations of, 362.

Albumone, 225.

Albumoses, salicylsulphonic acid as a test for, 552.

Alcohol, detection of higher alcohols in, 1379.

— estimation of, 1529. — is, eliminated by the milk? 365.

—— indirect estimation of, 543.

Alcohol, oxidation of, by permanganate, 1529.

- Röse's process for the estimation of, 1031.

- solutions, dilute, cryoscopy of, 1045.

Alcoholic fermentation, influence of oxygen and concentration on, TRANS.,

 function primary, value of the, 799.

— tertiary, value of, 1066.

Alcohols, higher, detection of, in spirits of wine, 1379.

— — in spirits, estimation of, 387. - mechanical determination of the boiling points of, 1039.

polybasic, thermochemistry of, 763.

- primary, direct synthesis of, 27.

- tertiary, oxidation of, 28.

Aldeacids, 696.

Aldehyde. See Acetaldehyde.

Aldehyde, tetracarbon, presence of, in brandy, 810.

Aldehyde-ammonias, compounds thiourea and thiocarbimides with, TRANS., 509.

Aldehydes, action of sodium on, 169.

- action of zinc and ethyl chloracetate on, 1300.

aromatic, reduction of, 167.

- bromo-, formation of, by the action of bromine on alcohols of the ethyl series, 809.

- colour reaction of, with aromatic nitro-compounds, 1263.

- condensation of, with azo-compounds, 854. condensation of, with benzoylpi-

peridine, 1364.

- fatty, condensation of, with dicyanophenylhydrazine, 596.

- occurrence of acetyl derivatives in the urine of animals after ingestion of, 1504.

- sodium nitroprusside as a reagent for, 924.

Aldehydic oxygen, estimation of, 546. 153Ŏ.

Aldol, preparation of, 1423.

Aldoximeacetic acids, configuration of, 1069.

Aldoximes, action of acetic anhydride on, 1174.

— configuration of, 1174.

conversion of, into nitriles, 1174.
molecular transformations of, 163.

Alimentary canal, absorption of water from, 1258.

 disinfection of the, 226. Alizarinamide, \$\beta\$-, preparation of, 864. Alkali carbonate, normal, detection of, in hydrogen alkali carbonate, 1130.

- combined, in soap, estimation of, 384.

--- hydroxides, estimation of, 526.

Alkaline earth metals, direct combination of nitrogen with, 566.

Alkaline earths, action of sulphur and water on, 770.

— characteristics of, 17.

Alkalis, action of sulphur on, 770.

- influence of, on the hydrolytic action of yeast, Trans., 936.

- standard, use of potassium hydrogen tartrate for titrating, 525.

Alkaloïd from chrysanthemum flowers,

from Corydalis tuberosa, Trans., 244, 605.

- from Javan coca leaves, 361.

Alkaloïds, free, estimation of, and of their molecular weights, 666.

- influence of, on the germination of seeds, 228.

— of Belladonna, 1498. — of Berberis, 641, 1498.

---- of Berberis aquifolium and B. vulgaris, 641.

— of Lupinus albus, 892.

- of the Areca nut, 737.

- of the root of Corydalis cava, 1366.

— of the Solanaceæ, 213. — of true Aconitum napellus, TRANS., 385.

- reactions of, with potassium platinothiocyanates, 287.

Alkyl and acidyl sulphides, 300, 581.

bromides and iodides, affinity coefficients of, 1289.

- halides and alcoholic potash, velocity of reaction between, 399.

--- phenylcarbamates, action of nitric acid on, 711.

Alkylacetonedicarboxylic acids, 148. Alkylcamphors, preparation of, 72.

Alkylcyanocamphors, 1344.

Alkylorthotoluidines, paramido-, 1078. Allanite from Gyttorp, Sweden, 1409.

Alloeinnamic acid, condensation of. with phenols, 848.

- formation of, from phenylpropiolic acid, 848.

Allotropic states of some elements, 405. Alloxanhydrazone, 442.

Alloys, change of voltaic energy of, during fusion, 254.

- estimation of gold, tin, and cadmium in, 1030.

Alloys, metallic, electrolytic preparation ot, 394.

- micrographic analysis of, 1399.

Allyl cyanide, constitution of, 27.

- fluoride, action of halogens on,

– phenylamidoacetate, 468.

— sodionitro-, 1062.

sodium thiosulphate, 1418.

Allylacetic acid, oxidation of, 958. Allylcarbaminesodiocyamide, 703.

Allyldithiobiuret, α-, 704.

Allylethylsuccinic acids, 697. Allylformamidine bisulphide, 292.

Allylfurfurylthiocarbamide, 43.

Allylisobutylthiocarbamide, symmetrical, 702.

Allylmethylsuccinic acids, 697.

Allylmelhylthiohydantoïn, 151.

Allylnitrolic acid, 1063.

Allylthiccarbamide, action of bromine on, Trans., 545.

Allylthiohydantoin, 151.

Allyltrimethylammonium hydroxide,

- — derivatives of, 950.

--- salts, 949. Alum, detection of, in wines, 1522.

Alumina, volumetric estimation of, 535. Aluminium, action of certain liquids on,

687, 1281. - action of chlorine and of bromine on, 118.

- action of mercuric cyanide dissolved in water and in organic solvents on, 797.

action of nitric acid on, 1403.

--- analysis of, 1130.

- and iron, estimation of, by the Glaser method, 755.

- - estimation of, in the presence of phosphoric acid, 755.

— and its alloys, assay of, 535.

---- commercial, assay of, 102, 535.

- condition of, in cast iron, 19.

- direct estimation of, in iron and steel, 102.

— estimation of, in phosphates, 536.

-- hydroxide, colloidal solution of, TRANS., 154.

— in mineral waters, 1287.

occlusion of hydrogen by, 567.

---- phosphate, action of ammonium citrate on, 1127.

— estimation of, 1522.

potassium fluoride, 1162.

- specific heat of, 673.

— and latent heat of fusion of, 1281.

suitability of, for domestic purposes, 687, 1281,

- sulphide, 943.

Amalgams, electrolytic estimation of metals as, 753.

Amanita pantherina, toxic principle of, 232.

Amber, so-called, of Cedar Lake, Canada, 573.

Amethylcamphophenolsulphone, action of nitric acid on, 999.

Amethylcamphophenolsulphonic action of nitric acid on, 999.

Amides, aromatic, action of trimethylene chlorobromide on, 1491.

dehydration of, in contact with diphenyl-derivatives, 617.

Amidines, 51.

-- action of nitric acid on, 951.

Amido-acids, action of hydriodic acid on, 38.

- influence of, on gastric digestion, 742.

Amidoazobenzene, action of aniline hydrochloride on, 492.

Amido-groups in organic bases, method of determining the number of, Proc., 1892, 133.

Amidosulphonic acid, 700.

Amidoximes, 135, 317.

action of benzenesulphonic chloride on, 460.

Amines, aromatic, action of trimethylene chlorobromide on, 1491.

- - conversion of, into chlorine derivatives of the hydrocarbons, 705. - - isomeric change in the synthesis of, 44.

---- fatty, unsaturated, 30, 578.

--- primary, preparation of, by means of potassium phthalimide, 157.

- tertiary aromatic, action of arsenic chloride on, 1321.

Ammonia, action of magnesium on, 409.

— alcoholic solutions of, 1049.

— excretion of, 365.

--- in the atmosphere and rain water of the tropics, 381, 909.

- reduction of nitric acid to, by the galvanic current, 403.

Ammonio-copper ammonium cyanide,

Ammonium barium imidosulphonate, TRANS., 966.

- calcium imidosulphonate, Trans.,

 chloride, action of, on silicates, at its dissociation temperature, 772.

- influence of ammonia on the solubility of, 276.

- diaminechromium thiocyanate, 798.

— dithionate hydrochloride, 13.

— ethyl sulphate, 700.

Ammonium fluoroxyhypovanadate, 787.

fluoroxyvanadates, 785.

- imidosulphonates, Trans., 946.

- isobutyl sulphate, 701. ---- manganese chloride, 781.

- methyl suiphate, 700.

- nitrate, explosion of, 683.

---- nitride, 113.

---- orthotolylimidodiacetate, 1335.

pentasodium imidosulphonate, TRANS., 961.

- pyrosulphate, Trans., 948.

- salts, direct absorption of, by plants, 229.

- sodium hydrogen imidosulphonate nitrate, Trans., 962.

---- stannibromide, 121.

- sulphate, formation of, by burning coal gas, 1389.

mineralising influence of, 1399.

- tetraminechromium thiocyanate,

Ampelochroic acids, α -, β -, and γ -, 1242, 1243.

Amphiglyoxime, chlor-, 693.

Amyl alcohol, formation of, from starch by a bacterium, 90.

alcohols, action of bromine on, 809

phenylamidoacetate, 468.

Amylacetylene, normal, 1064.

Amylamine, ε-chlor-, 717.

hydrogen diaminechromium thiocyanate, 1000.

Amylamylenamine, 804.

Amylenehydroxynaphthaquinone,

TRANS., 611.

Amylfurfurylcarbamide, 43. Amylmethylacetylene, 1065.

Amyloid, vegetable, 803.

Amyrilines, 288.

Amyrinoxime, a-, 290.

Amyrins, α - and β -, hydrocarbons from, 288.

- - oxidation products of,

290.

Amyrone, α-, 290. Amyrone, β-, 290.

Amyroneoxime, \(\beta\cdot\), 290.

Anæmia, tropical, 363.

Analcime as rock forming material, 1413.

Analgen, 1104.

Analysis, combination of wet and dry methods in, 100.

- elementary, new drying apparatus for, 657.

gravimetric, simple and rapid method of, 524.

 of liquids, application of capillary phenomena to, 236.

1590 Analysis, organic, new method of, 753. quantitative, new methods of, 103, 538. - use of bromic acid in, 910, 1027. use of iodic acid in, 1027. Anemonic acid, 1241. Anemonin, 1241. Anemoninic acid, 1241. Angelic acid, constitution of, 1304. Angostura bark, constituents of, 642. Angosturin, 744. Anhydrobenzenesulphoneorthamidobenzamide, 334. Anhydrocinnamaldehydanisidine, 1195.Anhydro-derivatives and citric aconitic acids, Trans., 1033. Anhydroecgonine, constitution of, 360. Anhydroformaldehydaniline, 1190. Anhydrometanitrocinnamaldehydanisidine, 1195. Anhydrotricarballylic acid, 41. Anhydrovaleraldehydaniline, 1193. Anilacetone, isonitroso-, 985. Anilbenzoin, action of hydrocyanic acid on, 1196. Anilcyanamide, 1323. Anilic acid, decomposition products of, - acids, substituted, crystalline forms of the sodium salts of, TRANS., 581. Anilides, acid, colour reactions of, 709. - isoanilides and their analogues, 705. Anilidobenzenemetadisulphonic acid, 333. Anilidobenzenesulphonic acid, metanitro-orsho-, 332. - ---- metanitropara-, 331. Anilidobromopianic acid, 1209. Anilidocinnoline, 1494. Anilidodiphenylpyrrolone, 1002. Anilidoisobutyric acids, 1338 Anilidoisovaleramide, a., 1192. Anilidometanitrobenzophenone, ortho-, para-, 336. Anilidometasulphobenzoic acid, ortho-, - para-, 333. Anilidometamidobenzenesulphonic acid, ortho-, 332. - para-, 332. Anilidonaphthoic acid, β-, 1476. anilide, **\beta**-, 1476. Anilidonitrobenzanilide [2:5], 326. Anilidoparadiketohexene, pentachlor-,

Anilidopropionic acid, a-nitroso-, 1456.

Anilidopropionic acid, \$\beta\$-, 1342.

Anilidotetraphenylpyrroline, 995.

Anilidotrinitrotoluene, sodium derivative of, 1218. Aniline, action of trimethylene chlorobromide on, 1491. - and furfuraldehyde, condensation of, 1452. - hydrogen diaminechromium thiocyanate, 1000. – nitrodibrom-, 1205. — orthonitro-, preparation of, 837. -- platinothiocyanate, 287. - refractive power of, at different temperatures, Trans., 301. – thionylthio-, 1326. Anilineazo-a-naphthol, ethyl and methyl ethers of, 862. Aniline-black, dyeing with, in the dry way, 323. Anilmesulphonic acids, parachlor- and parabrom-, constitution of, Proc., 1892, 40. Anilpyruvic acid, condensation of, 54. Animal economy, action of oxalic acid and its derivatives on the, 1018. - change of sulphanilic acid into sulphanilocarbamic acid in the, 903. organism, mechanism of the production of urea in, 89. Anisodus luridus, alkaloïds of, 232. Anisoil, dinitrodiamido-, 596. sulphonic acids derived from, Proc., 1892, 90. - tetramido-, 596. Anniversary meeting, Trans., 474. Anodonta cygnea, blood of, 648. Ant oil, composition of, 942. Anthracene, action of nitric acid on, TRANS., 865. - action of nitric acid on, in presence of acetone, Trans., 871. - action of nitric acid on, in presence of ether, Trans., 872. - action of nitric acid on, in presence of trimethylcarbinol, Trans., 870. ——— benzyl nitrate, Trans., 871. - isobutyl nitrate, TRANS., 867. – propyl nitrate, Trans., 866. Anthranilamide, dichlor-, 335. Anthrax, chemical pathology of, 744. - in man, 1117. Anthrole, nitro-, TRANS., 869. Anthrone, nitro-, TRANS., 865, 868. - action of alcoholic potash on, Trans., 869. Anthyllis vulneraria, composition of, 522.Antiglyoxime, chlor-, 694. Antimonious chloride, solution of, in saturated solutions of sodium chloride,

- compounds, estimation of, 526.

Antimonite from Felsöbánya, 1054.

413.

Antimonite from Magurka, 1054.	Arsenic, electrolytic separation of gold
Antimony, action of nitrie acid on, 1402.	from, 920.
- arsenic and tin, detection of, 918.	estimation of, by oxidation with
- separation of, TRANS.,	the electric current, 752.
424.	—— estimation of, in wall paper, 382.
— double halogen salts of, 788.	— hydrosulphides, Trans., 127.
— electrolytic detection of, 541.	lowering of the freezing point of
estimation of, 242.	-— lowering of the freezing point of bismuth by, Trans., 894.
— hydrosulphide, Trans., 133.	—— lowering of the freezing point of
lowering of the freezing point of	cadmium by, Trans., 899.
bismuth by, Trans., 896.	— lowering of the freezing point of
— lowering of the freezing point of	lead by, Trans., 906.
cadmium by, Trans., 901.	- separation of antimony from
lowering of the freezing point of	541.
lead by, TRANS., 908.	testing metallic iron for, 1030.
minerals, assay of, 918.	Arsenious acid, volumetric analysis
separation of, from arsenic, 541.	with, 1374.
sodium allov. 773.	— compounds, estimation of, 526.
—— sodium alloy, 773. —— sulphide, colloïdal solutions of,	
Trans., 142.	TRANS., 140, 144, 160.
thiophosphate, 413.	Arsines, tertiary, action of benzal chlor
Antipyrine, action of sodium and carb-	ide on, 984.
onic anhydride on, 1106.	Artemisia absinthium, absinthin from
— alcohol of, 708, 730, 1106.	1240.
nitro-, 730.	Artichoke, Jerusalem, composition and
paralkyloxy-derivatives of, 1080.	cultivation of, 1024.
Apionyloximidoacetic acid, 328.	— cooked, composition of
Apoatropine, 1255.	TRANS., 227.
Apocinchonine, 1253.	Asaprol, 1116.
Apple tree leaves, analyses of, 1372.	Asbestos, use of, in filtration, 751.
Arabinose, fermentation of, with Bacillus	Asbolin, 1312.
ethaceticus, Trans., 737.	Ascharite, a new borate, 792.
physiological action of, 1506.	Asparagine, decomposition of, in the
reactions of, 290.	human body, 904.
thermochemistry of, 763.	- influence of carbohydrates on the
Arabitol, thermochemistry of, 764.	accumulation of, in plants, 91.
Arctic Ocean, water from the, 1287.	Aspergillus niger, action of, on fumar
Areca nut, alkaloïds of the, 737.	ates and maleates, 820.
Arecaïdine, 739.	Asphalt in Utah and Colorado, 21.
Arecoline and its salts, 738.	Asphyxia, effect of, on the glycolytic
Argentic disodium imidosulphonate,	and saccharific powers of the blood
Trans., 976.	517.
Aristolochia argentina, alkaloïd from,	Assimilation of atmospheric nitrogen
894.	1507.
—— reticulata, volatile oil from, 70.	of carbohydrates, 742.
Aristolochin, 874.	Astacus fluviatilis, blood of, 648.
Aristolochine, 894.	Astragalus, analyses of, 522.
Aromatic compounds, unsaturated,	Astrophyllite, new analyses of, 22.
action of nitrous acid on, 447.	Atmosphere, estimation of organi
Arsenic acid, separation of, from mer-	matters in, 542.
cury, sodium, chlorine, and nitric	—— estimation of the carbonic anhydr
acid, 530.	ide of, 533.
thio-, and thioxyarsenic acid,	— of the Tropics, ammonia in, 381
separation of, 1519.	909.
volumetric estimation of,	Atomic weight and magnetism, 672.
1519.	of boron, TRANS., 650.
Arsenic, allotropic states of, 405.	———— of boron, Trans., 650. ————————————————————————————————————
antimony and tin, separation of,	of cobalt, 1159.
Trans., 424.	— — of nickel, 1158. — of oxygen, 1388. — of palladium, Trans., 745.
—— cyanide, 1164.	— of oxygen, 1388.
direct estimation of, in minerals	- of palladium, TRANS., 745.
and metals, 530.	— weights, relations between, 938.

Atropa belladonna, alkaloïds of, 231. Atropamine, 1256. Atropine, detection of, 1534. — nitro-, 1014. Atropine, \(\psi\)-, 891. Aurantiol, 868. Auric sulphide, properties and reactions Aurin, acetyl derivatives of, 1319. Aurintricarboxylic acid, 855. Autocatalysis, 1270. Axinite, formula of, 125. Azimidazoles, 313. Azines of the uric group, 70. Azobenzene, dinitroso-, 1079, 1198. - --- so-called, 889. ---- nitronitroso-, reduction of, 1322. Azobenzenedisulphonamide, 973. Azobenzenemetachlorophenylhydrazine, — trinitro-, 456. - trinitronitroso-, 455. Azobenzeneorthocarboxylic acid, 67. - --- parachlor- and parabrom-, Azobenzenephenylhydrazine, nitro- and chloronitro-derivatives of, 455. Azo-colours, alkylated, of the naphthalene series, reduction of, 862. Azo-compounds, condensation of aldehydes with, 854. — mixed, 710. — nitroso-, constitution of, 1453. — oxidation of, 48. - reduction products of, 839. Azodibenzylamine, ortho-, 316, 890. Azodicarbonamide, 1298. - preparation of, 1430. Azodicarbonamidine salts, 1297. Azodicarboxylic acid, 1429. Azo-group, intramolecular formation of, - substitution of, for ketonic oxygen, 451. Azoimide, 112. - action of, on living organisms, heat of formation of, 261. - thermochemistry of, 933. Azoisatin, 451. Azomethylquinoline, 729. Azonium bases, 1246. - compounds, 1108. Azotoluenedisulphonamide, 1468. Azoximes, 135, 317. Azoxymethylethylisoxazole, 79. Azoxymethylquinolines, 727, 729.

Azoxyorthodichlorostilbene, para-, 444.

Azoxyphenetoïl, para-, 159.

B. Bacillus amylozymicus, 90. - ethaceticus, fermentation of arabinose with, Trans., 737. - fermentation of mannitol and dextrose with, TRANS., 442. ethacetosuccinicus, fermentation of mannitol and dulcitol by, TRANS., - morphological characterisation of, TRANS., 275. - of malignant ædema, action of, on carbohydrates and on lactic acid, 91. - radicicola, accumulation of atmospheric nitrogen in cultivations of, Bacteria, soluble colouring matters produced by, in distilled medicinal waters, Bacterium which ferments starch and produces amyl alcohol, 90. Balance, modified, for rapid weighing, Balance sheet of the Chemical Society, from March 19th, 1891, till March March 19th, 1891, till March 18th, 1892, Trans., 485. Barium acetothiosulphate, 1419. ammonium phosphotungstates, 1160. - and calcium, separation of, 915. --- estimation of, 539. --- hydrogen imidosulphonate, TRANS., 965. — hypophosphate, 403. --- imidosulphonate, Trans., 964 - isophthalate, composition and crystalline form of, 179. - mercury imidosulphonate, TRANS., 977. - nitride, 566, 776. - oxide, non-existence of dimorphism in, 17. – permolybdate, 1160. peroxide, action of, on metallic salts, 408. —— use of, in analysis, 1031. — barium persulphate, 12. — potassium imidosulphonate, TRANS., 967. separation of, from calcium, 100. ---- sodium imidosulphonate, Trans., strontium and calcium, separation of, 660.

— sulphamate, Trans., 966. thiocyanate, water of crystallisa-

tion of, 1418.

Barium, volumetric estimation of, 1521. Barium-group, analysis of, 660.

Bark of trees, calcium oxalate in the, 1370.

Barks, estimation of gallotannic and gallic acids and tanuin in, 390.

Barley, distribution and condition of iron in, 1509.

Barytes from Missouri, 792.

Basalt of the Stempel, near Marburg,

Bases and acids, study of the chemical neutralisation of, by means of their electrical conductivities, 2.

 organic, action of ethyl cyanacetate on, 1071.

----- chloriodides of, 1356.

— — method of determining the number of imido-groups in, Proc., 1892, 133.

-- Schiff's, 1189.

Baths, hot, influence of, on the excretion of nitrogen and uric acid from the human system, 1503.

Batteries, gas, E.M.F. of, 393.

secondary, theory of, 1381.

Beans, broad and haricot, cooked, composition of, Trans., 227.

Bebeerine, reactions of, 756.

Beer and beer wort, estimation of maltose, dextrose, and dextrin in, 248.

Beeswax, analysis of, 1034.

--- assay of, for vegetable wax, 551.

--- detection of resin in, 923.

- examination of, 251.

Beet diffusion chips, frozen and unfrozen, composition of, 1512.

Beet juice, organic acids in, 231.

Beetroot, cooked, composition Trans., 227.

Behenolic acid, action of reducing agents and of bromine on, 812.

____ diiodo-, 471. ____ tetrachloride of, 1427.

—— anilide, 1427.

---- diphenylhydrazide, 1427.

---- phenylhydrazide, 1427.

Belladonna, alkaloïds of, 1498.

---- subsidiary alkaloids of, 1255.

— wild, alkaloïds of, 231.

Benzal chloride, condensation of with benzene, 719.

Benzalamidoguanidine, 1297.

Benzaldehyde, action of, on 2:6-lutidine, 1360.

- action of sodium on, 171.

--- action of zinc and ethyl ehloracetate on, 1300.

--- and ethyl cyanacetate, condensation of. 1086.

---- hydrazone. TRANS., 788.

- orthamido-, condensation of, 1106.

Benzaldehyde. parabromometanitro-, 336.

- paranitro-, change of, in the system, 1504.

Benzaldehydephenylhydrazone, amido-, 1106.

Benzaldiphenylmaleïde and its derivatives, 179, 483.

- bromo-, 483.

Benzaldiphenylmaleïmidine, 484.

– nitro-, 487.

Benzaldiphenylmaleïnethylimidine,

Benzaldoxime, synorthochloro-, 1200. Benzaldoximes, orthochloro-, 1199.

– lpha- and eta-paranitro-, 163. Benzalglucoheptitol, 1168.

Benzalhydrazine, 456.

Benzalsemicarbazide, 1297.

Benzamide 2: 5-amidonitro-, 326.

- orthamido-, action of sulphonic chlorides on, 334.

- thio-derivatives of, 54. physiological action of, 367.

- thio-, action of iodine on, 1109.

Benzamidoxime benzyl ether, 464. Benzene, action of acetic and benzoic chlorides on halogen derivatives of,

—— and dipropargyl, 1436.

- chloro-, action of bromine on, TRANS., 111.

--- chloropentabromo-, 155.

—— condensation of, with benzal chloride, 719.

— constitution of, 1211.

---- dichlorotetrabromo-, 155.

dinitro-, physiological action of,

 dinitrochloro-, action of, on polyhydric phenols, 310.

- flames, experiments on, TRANS., 209, 210.

hexabromide, preparation TRANS., 110.

— hexachloride, chloro-, α - and β modification of, Trans., 103.

- action of potassium cyanide on, TRANS., 108.

- reduction of, 594.

— iodation of, 1310.

---- metadinitro-, 704.

---- bromination of, 155.

—— reduction of, 595.

— penta-, derivatives of, 596.

--- ring, displacement of halogen atoms in the, 335.

- rule for determining whether a given mono-derivative of, shall give a meta-di-derivative or a mixture of andpara-di-derivatives, TRANS., 367.

Benzene, symmetrical trinitro-, bromin-Benzenethiosulphonic acid, reactions of, ation of, 155. — tetrachlorodibromo-, 155. Benzenylamidethoxime, action of nitrous - triamidotrinitro-, symmetrical, reacid on, 323. duction of, 1198. Benzenylamidine picrate, 705. – tribromonitro-, 1182. — salts, 51. - unsymmetrical tetrachloro-, pro-Benzenylchloroxime, 463. perties of, Trans., 109. - paranitrobenzyl ether, 464. Benzeneazocyanocamphor, 1343. Benzenylchloroximeglycollic acid, 465. Benzeneazo-β-naphtholdisulphonic acid, Benzenyldiamidoacetone, 952. Benzenylethoxime salts, 323. oxidation of, 48. Benzeneazo-α-naphthylglycocine, 191. Benzenylhydrazoximamidobenzylidine, · -- meta-, ortho-, and parapreparation of, 461. nitro-, 1100. Benzenylimidosulphonic acid, 701. Benzeneazoparacresol, metachloro-, Benzenylnitrotoluylenamidine, 1197. Benzenylorthohomosalicenylazoxime, - parachloro-, 974. Benzeneazoresorcinol, para-, 977. Benzenylparahomosalicenylazoxime, Benzeneazo-\(\beta\)-tolylnaphthylamine, 1476. Benzenediazoacetanilide, 458. Benzhydroxamic acid, stereoisomeric Benzeneindone, 341. derivatives of, 461. Benzenemetadisulphonic acid, amido-, Benzide, diamidosulpho- and its derivatives, 1093. Benzenes, iodo-, 1310. Benzidine, polymethylene bases from, - uitro-, heats of combustion and formation of, 4. Benzidinedisulphonamide, 974. - — displacement of the nitro-Benzidinemetacarboxylic acid, 68. group in, by chlorine or bromine, Benzidylbromopianic acid, 1210. Benzile, action of aniline on, 1470. Benzenesulphinic acid, parabromo-, -- action of, on triamidodiphenyl-1091. amine, 1109. Benzenesulphonamides, mixed - action of paramidodimethylaniline and secondary amines, 64. on, 855. Benzenesulphonebenzylamide, 65. sodium derivative of, 171. Benzenesulphonemethylethylamide, 64. Benziledianil, 1470. Benzenesulphoneorthamidobenzamide Benzileoximeanil, 1470. and its derivatives, 334. Benzileoximehydrazone, 1471. Benzenesulphoneorthamidobenzo-Benzileoximeparatolyl, 1470. methylamide, 335. Benzileoximes, 1470. Benzenesulphoneorthamidobenzo-Claus' theory of the, 186, 598. phenylamide, 335. Benzilideneamidocarbazole, 616. Benzenesulphoneorthamidobenzoyl-Benzilidenebenzidine, nitro-derivatives phenylhydrazine, 335. of, 854. Benzenesulphoneorthomethamidobenz-Benzimidazoles, 631, 632. amide, 335. Benzimido- β -chlorethyl ether, 1331. Benzofurfuran derivatives, synthesis of, Benzenesulphoneorthotoluidine, 65. Benzenesulphoneparaphenetidine, 65. Benzenesulphonepiperidine, 65. Benzoic acid and benzaldehyde, con-Benzenesulphonic acid, metanitro-orthdensation of, 339. amido-, 331. - - 2 : 5-bromonitro-, amide, — — metanitroparamido-, 331. — — nitroso-, preparation anilide, and chloride of, 326. and - 2: 4-chloronitro-, chloride, salts of, 475. amide, and anilide of, 327. - impurities in commercial, - acids, chloramido- $\lceil 1:2:4$ and 1:4:2], 182. 604. - — chloronitro- [1 : 2 : 4 and 1:4:2], 182. - — halogenated, action of am---- parabromo-, iodation of, 714. monia and aniline on, 331 -- parabromometanitro-, ---- chloride, parabromo-, 1220. of, 714. ---- parachloro-, 1220. - separation of salicylic acid

from, 1532.

Benzenesulphonitramide, 850.

Benzoic acids, amido-, reactions of, 847, bromo-, bromination of, 171. dibromo-, 1205. ---- dichloro-, 1206. - halogenated nitro-, action of ammonia and aniline on, 326. Benzoïn, action of paradiamidodimethylaniline on, 855. Benzonitrile, action of benzoic chloride on, 1183. - action of sulphuric anhydride on, - compound of, with hydrogen cyanide, 1449. Benzonitriles, dibromo-, 1205, 1206. – dichloro-, 1206. Benzoparadifurfuran-a-dimethyl- β -dicarboxylic acid, paradichloro-, 610. Benzophenone, diparabromodimetanitro-, 336. diparabromometanitro-, 336. --- imido-, hydrochtoride, 339. —— orthbromo-, 992. – orthohromometanitro-, 336. — parabromometanitro-, 336. ---- paradinitro-, 1460. --- paramido-, oximes of, 489. --- paramidometanitro-, 336 paramidometanitroparabromo-, of, 451. 336. sodium compound of, 170. Benzophenone-derivatives, oximes of, Benzophenoneparamidobenzoic acid. Benzotoluidide, paranitro-, 839. - thionitro-, 839. Benzoyl compounds, preparation of, Benzoylacetamide, 325. Benzoylacetone, acids from the dicyanhydrin of, 1471. action of paramidodimethylaniline on, 855. - magnetic rotation of, TRANS., 831, Benzovlaconine, formation of, TRANS., 445. Benzoylamidocarbazole, 616. Benzoylbenzamide, metanitro-, 52. Benzoylbenzeneazoacetone, 977. Benzoylbenzenehydrazo-orthocresol, Benzoylbenzylmetaxylidine, 1320. Benzoylbenzylparatoluidine, 313. Benzoylchlorophenols, isomeric, 308. Benzoyldihydroxyanhydroecgonine, derivatives of, 1016. - metaxylyl ketone, 338. Benzoyldiorthotolylhydrazine. 843. methyl ether, parauitrorthochloro. Benzoyldiphenylhydrazide, 711. 444.

Benzoyldiphenylhydrazine, 843. Benzovlformorthotoluidide, 14+2. Benzoylglutarimidoxime, 138. Benzoylhydrochlorocarvoxime, 1348. Benzoylimidopropionylethyl derivatives of, 450. Benzoylisoeugenol, 46. Benzoyllimonene nitrosochloride, 1348. Benzoylmetachlorobenzeneazoparacresol, 975. Benzoylmetachlorobenzenehydrazoparacresol, 975. Benzoylmethyltrimethylene, TRANS., Benzoylmethyltrimethylenecarboxylic acid, TRANS., 84. - oxime of, Trans., 85. Benzoyl-a-naphthylhydrazine, 509. Benzoylnicotenylamidoxime, 207. Benzoylnitrosoresorcinol ethyl ether, Benzoylorthamidophenylacrylic acid, Benzoylorthotolylcarbamide, 832. Benzoylorthotolylhydrazine, 843. Benzoyloscine, 1498. Benzoylparabromanilide, 4°0. Benzoylparachlorobenzeneazoparacresol, 975. Benzoylphenylazomethylene, reactions Benzoylphenyldiiodomethane, 451. Benzoylpropionic acid, oximes of, 1202. Benzoyl-a-pyridyllactic acid, 76. Benzoyl-\(\beta\)-pyridyllactic acid, 78. Benzoylpyruvic acid, oxime of, 304. Benzoylretene, 1205. Benzoylsuccinimidoxime, 137. Benzoylsulphobenzamidinic anhydride, Benzoyltetrahydroguinaldine, nitroderivatives of, 882. oxidation of, 881. Benzoylthiocarbimide and aldehydeammonia, TRANS., 532. Benzoyltrimethylene oxime, Trans., 86. Benzoylxylide, 491. Benzyl alcohol, paramidorthochloro-, - paranitrorthochloro-, 445. bromide, paranitrorthochloro-, derivatives of, 444. — dinitrosylorthochloro-, 1200. ethyl ether, paranitrorthochloro, hydroxycamphocarboxylate, 74. --- imidodicarbothioxylate, 844. imidod phenylthiocarbamate, Proc., 1892, 97.

Benzyl orthotoluate, action of sodium on, Proc., 1891, 167. — orthotolylcarbamate, 832. - ortho-xyxlyl ketone, 338. ---- paraxylyl ketone, 338. phenylimidophenylbenzylthiocarbamate, Proc., 1892, 97. Benzylacetanilide, orthamido-, 80. Benzylacetoglutaric acid, 963. Benzylacetomethylamide, diorthonitro-, – orthamido-, 218. Benzylamidoacetic acid, benzylamide of, Benzylamidosulphonic acid, 476. Benzylamine, action of carbonyl chloride on, 312. and furfuraldehyde, condensation of, 1452. — di-iodo-, 1449. — diorthonitro-, 218. ---- hydrogen malate, action of heat on, 820. - orthonitro-, 217. Benzylaniline, paranitrorthochloro-, 445. Benzylbenzenylamidine, 1110. Benzylbenzyl ortho-xylyl ketone, 338. Benzylbenzylhydroxylamine, nitro-, oxidation of, 1456. Benzylborneols, 73. Benzylbornylamine, 1238. Benzylcamphor, 73. Benzylcamphoroxime, 73. Benzyl- δ -caprolactone, γ -, 963. Benzylcarbamide, orthonitro-, 218. Benzylchrysaniline, 1095. Benzyleinchonidine, 1251. Benzyldihydroxycinchotenidine, 1251. Benzydihydroxycinchotenine, 1250. Benzyldiphenylmaleide and its derivatives, 484. Benzyldiphenylmaleïmidine, 484. Benzyldiphenylmaleinethylimidine, 485. Benzyldiphenylthiourea, Proc., 1892, Benzylethylparatoluidine, 313. Benzylethylphenylthioureas, isomeric, TRANS., 540. Benzylfenchylamine, 1239. Benzylfumaramic acid, 821. Benzylfumarimide, 821. Benzylfurfuraldoxime, 1434. Benzylhydroxyanthranol, 346. Benzylhydroxycaproic acid, salts of, Benzylhydroxydiphenylmaleïde, 483. Benzylhydroxylamine, β -chloro-, 1200. – β-dichloro-, 1199. --- β-metanitro-, 51. Benzylhydroxylamines, oxidation of, 316. Benzylidenebornylamine, 1238. Benzylidenecinchonic acid, 1489.

Benzylidenecinchoxinic acid, 1489. Benzylidenecyanacetic acid, 1340. Benzylidenediphenylsulphone, 612. Benzylidenefenchylamine, 1239. Benzylidene- 2: 6-lutidine, 1360. - reduction of, 1361. Benzylideneorthamidophenol, 196. Benzylideneparamidophenol, 1451. Benzylideneparanitraniline, 1194. Benzylidenepinylamine, 997. Benzylidenepiperazine, 211. Benzylidenethiophenylhydrazone, 1326. Benzylisobenzaldoxime, metanitro-, 50. Benzylisobutylcarbamide, 312. Benzylisometanitrobenzaldoxime, intramolecular change of, 50. Benzyliso-orthochlorobenzaldoxime, orthochloro-, 1199. Benzylisoparanitrobenzaldoxime, intramolecular change of, 50. Benzylmalamic acid, 822. Benzylmalimides, α - and β -, 821. Benzylmalonic azimide, TRANS., 796. - phenylhydrazide, Trans., 796. Benzylmetanitrophenylcarbamide, 312. Benzylmetaxylidine, 314. - nitro-, 1320. Benzylmetaxylidinesulphonic acid. 1320.Benzylmethylamine, diorthonitro-, Benzylmethylparatoluidine, 313. Benzyl-α-naphthylcarbamide, 312. Benzylnitrobenzylhydroxylamine, oxidation of, 1456. Benzylænanthaldoxime, 1436. Benzylorthotoluidine, 48. Benzylorthotoluidinesulphonic acid, Benzylparachlorodeoxybenzoïn, 1227. Benzylparaditolylcarbamide, 1083. Benzylparatoluidine, 313. - hydrochloride, orthamido-, 734. Benzylparatolylcarbamic chloride, 1083. Benzylparatolylsemithiocarbazide, Trans., 1022. Benzylpentoxazoline, µ-, 215. Benzylphenylhydrazine, orthamido-, - orthonitro-, 1455. - phosphenite, 1325. Benzylphenylhydrazone, thionyl., 1324. Benzylphenylmethylcarbamide, 312. Benzylphenylsemithiocarbazide, TRANS., 1021. Benzylpiperidylcarbamide, 312. Benzylquinoline-y-carboxylic acid, betaine of, 1488. Benzylsulphonethiobenzylmethylmethane, 613. Berbamine, 641. Berberine, 1498.

Berberine, action of bromine on, 1498.

— pyridineearboxylic acids from, 1357.

---- salts, 642.

Berberis alkaloïds, 641, 1498.

Berberis aquifolium, constituents of, 641.

- vulgaris, alkaloïds of, 641.

Berberonic acid, 1357.

Bergamot oil, 868, 1235.

— stearoptene of, 71.

Bergapten, the stearoptene of bergamot oil, 71.

Beronic acid, 1357.

Beryllium hypophosphates, 404.

Betaine in cotton-seed foods, 380.

Betel cil, composition of, 833.

Betelphenol, 833.

Biazolones, 508.

Biguanide, preparation of, from guanidine, 737.

Bile during inanition, 225.

- ox. presence of myristic acid in, 1114, 1503.

--- putrefaction of, 518.

Birotation of sugars, influence of ammonia on, 1419.

Bis- α_1 -keto- γ_1 -methyljulolidyl, 497.

Bismuth, action of nitric acid on, 1403.

—— and cadmium, separation of, by means of bromine vapour, 385.

and lead, separation of, by means

of bromine vapour, 540.

- chloride, dissolution of, in a saturated solution of sodium chloride, 122.

—— double halogen salts of, 788.

--- estimation of, 539.

- estimation of, in silver slags, 919.

--- hydrosulphide, attempts to prepare, Trans., 132.

lead, tin, and cadmium, separation of, 754.

—— liquid, thermal expansion of, 259.
—— lowering of the freezing point of

eadmium by, Trans., 904.

-- lowering of the freezing point of lead by, Trans., 910.

— lowering of the freezing point of, when alloyed with other metals, Trans., 888, 892.

—— pure, 20.

— salicylate, 122.

--- separation of, from lead, 385.

- sodium alloy, 773.

- tribromide, action of hydrogen phosphide on an ethereal solution of,

Bismuthic acid, 413, 688.

Bismutite, 793.

Bis-1:2:3-phenylbenzoylmethylpyrazolone, 146.

Biurets, thio-, 703.

Bleaching powder, estimation of active chlorine in, 1374.

Blende, separation of lead, silver, and zine in, 1378.

Blood, action of carbon bisulphide on, 1520.

—— congulation of the, 87, 1112.

— detection of, 1369.

— disappearance of sugar from the, 363.

— dissolved nitrogen in, 1257.

- estimation of the glycogen in, 89.

--- fermentation of, 900.

formation of sugar from peptones in, 1502.

—— glycolysis in, 900.

---- glycolytic power of, 364.

of a living mammifer, absorption of carbonic oxide by, 743.

of Europeans living in the tropics, sp. gr. of, 363.

— of invertebrates, 648.

of leucæmic patients, peptones in the blood of, 519.

— of Pinna squamosa, 1016.

of the crustaceæ, blue colouring matter of, 898.

— peptone, gases of, 363.

---- sugar in, 743.

- toxic action of, 228.

—— variations of the glycolytic and saccharific powers of, in asphyxia and diabetes, 517.

Blood-ash, influence of nutrition on the composition of, 225.

Body, human, decomposition of fibrin, gelatin, peptone, and asparagine, in the, 904.

Boehmeria, composition of, 1511.

Boiler incrustation, composition of a, 17.

Boiling point curves for the normal paraffins, 947.

points of acids and alcohols, mechanical determination of, 1039.

— of compounds with complex terminal substitution, mechanical determination of, 1039.

— of compound of simple terminal substitution, mechanical determination of, 948.

of normal isomeric ethereal salts of the fatty series, calculation of, 260.

- of paraffin derivatives, calculation of, 797.

1598 Boiling points of solutions of metallic chlorides, Trans., 340. Boleite, 123. Beletus edulis and B. aurantiacus, distribution of sugars in, 519. Bone-black, iron in, 1053. Bones, fossil, of various ages, proportion of fluorine in, 1413. · influence of various salts on the composition of, 647. - recent and fossil, fluorine in, 1161. Borates, metallic, 404, 565. Boric acid, action of, on germination, - - and mannitol, freezing points of aqueous solutions of, 263. estimation of, 384.
influence of, on the electrical conductivity of dilute alcoholic solutions of organic acids, 1265. - - presence of, in the products of the soil, 93. Borneocamphene, 624, 625. Borneol, constitution of, 865. Bornyl ethyl ether, 200, 348. — methyl ether. 348. --- methylene ether, 200, 348. Bornylamine tartrate, 1238. Boron, action of, on organic halides, - amorphous, preparation of, 681, 682. — properties of, 1153. - atomic weight of, Trans., 650. ---- bromide, combination of ammonia with, 771. - preparation of, Trans., 655. --- iodidė, 1154. - - combination of ammonia and of hydrogen phosphide with, 771. - nitride, action of methyl alcohol on, 1311. — pentasulphide, 1394. — phosphides, 115, 272, 273. ---- phosphodi-iodide, 114. ---- phosphoiodide, 115. —– trisulphide, 1392. Bran, distillation of, with lime, Proc., 1892, 138. Brandy, presence of a tetracarbon aldehyde in, 810. Brasilein, derivatives of, 502. Brasilin, oxidation of, 502. Brassidic acid and erucic acid, stereometric relations of, 429, 812, 1427. -- bromo- and chloro-, 429. --- dichloro-, 1427. - - dichloride, 429.

- phenylhydrazide, 1428.

790.

Braunite from Sweden, 1404, 1405.

Breithauptite from Sarrabus, Sardinia,

Bromanilic acid, action of halogens on - crystalline form of the sodium salt of, Trans., 582. Bromic acid, use of, in quantitative analysis, 910, 1027. Bromides, estimation of, 527. - of potassium, sodium, and hydrogen, action of sulphuric acid on, Trans., 94. Bromine and chlorine, detection of, in presence of iodine, 1514. - - relative orienting effect of, PROC., 1892, 40. - carriers of, 155. - chlorine, and iodine, exchange of, between inorganic and organic haloïd compounds, 574. —— separation of, 1027. direct combination of, with metals, 118. - heat of combination of, with magnesium, 762. - vapour, separation of metals of the hydrogen sulphide group by means of, 754. Bromochloranilic acid, crystallography of the sodium salt of, Trans., 581. Bromoform, formation of acetylene from, 421. preparation of, from acetone and sodium hypobromite, 126. Brookite, 1055. Brushwood, food value of, 1511. Bulbocapnine, 1366. Bunsen burner for spirit, 1386. Bunte's salt, preparation and properties of, 799. Burettes, improvements in, 1027. Burner, new laboratory, 768, 1386. Butaldehydes, condensation of, with aniline, 1192. Butane, absorption-coefficient of, in water, 1043. Butanetricarboxylic acid, 42. Butter, acids of, 1113. - detection of coco nut fat in, 391.

detection of margarin in, 1034. - estimation of foreign fats in, 1532. - estimation of free scids in, 924. Butyl alcohol, normal, action of bromine on, 809. bromides, bromination of, 1414. chlorides, chlorination of, 1415. Butylamine, δ-chloro-, 131. Butylbenzene, action of aluminium chloride on, 1309. Butylchloralacetamides, 1067. Butylchloralaldol, 695. Butylchloralbenzamides, 1067. Butylchloraldoxime, 33.

Butylchloralformamides, 1067.

Butylenes, monobromo-, 127.

Butylidenaniline, 1192.

Butylmetaxylene, tertiary, derivatives of, 718.

Butylmethylacetylene, 1064.

Butylparisopropyltoluene, ortho-, 985.

Butylphenol, paratertiary, 44.

Butyltoluenesulphonic acid, nitration of, 718.

Butylxylenesulphonic acid, nitration of,

Butyramide, αβ-dibromo-, 27, 33.

Butyric acid, a-amido-, derivatives of, 1338.

— αβ-dibromo-, 27, 33. — β-sulpho-, 424.

Butyrolactone, action of sodium ethoxide on, 813.

---- hydrolysis of, 1303.

C.

Cabbage, cooked, composition of, TRANS., 227.

Cadmium, action of nitric acid on, 1278.

and bismuth, separation of, 385.

—— and copper, separation of, 534. - and gold, compound of, TRANS., 914.

--- atomic weight of, 1397.

— crystallisation of, 1398.

- diaminechromium thiocyanate, 1002.

- electrolytic separation of, from osmium and from nickel, 920.

— fluorovanadite, 788.

---- fluoroxyhypovanadate, 787.

- gold, and tin, estimation of, in alloys, 1030.

---- hydrosilicate, 1157.

--- hydrosulphide, Trans., 129.

--- lead, tin, and bismuth, separation of, 754.

lowering of the freezing point of bismuth by, Trans., 895.

lowering of the freezing point of lead by, Trans., 907.

- lowering of the freezing point of, when alloyed with other metals, TRANS., 888, 897.

- mercuric cyanide, Trans., 687.

---- mercuric thiocyanate, 10. ---- nitrate, basic, 1157.

- oxide, action of hydrogen peroxide on, 1278.

sulphides, 778.
use of, in assaying gold, 919.

Cadmium-silver alloy, analyses of, TRANS., 913.

Cæsium antimony chloride 788.

– bismuth chloride, 789.

bromiodides, 773.chloriodides, 773.

— chlorobromides, 773.

---- chlorobromiodide, 773.

— compounds, extraction of, from carnallite, 1395.

--- hydroxide, properties of, 274.

--- manganese chloride, 781.

--- reduction of, 274.

--- properties of, 274. — tribromide, 773.

100, 915.

– and strontium nitrates, separation of, by means of amyl alcohol, 915. separation of, as chromates,

914.

 chlorate, rate of decomposition of, by heat, 1275.

of, TRANS., 340.

- - solutions, dilute, cryoscopy of, 1045.

- chromate, solubility of, in dilute alcohol, 914.

estimation of, in gun-cotton, 1520.

—— estimation of, in phosphates, 534. - estimation of small quantities of, 914.

- hydrogen imidosulphonate, TRANS., 968.

— imidosulphonate, Trans., 968. - iron, and manganese, separation of, 916.

--- metaborate, 404.

— nitrate, basic, 1157, 1276.

 cryoscopy of dilute solutions of, 1045.

— nitride, 566.

- oxalate in the bark of trees, 1370.

– phosphate, crystalline, 407.

— phosphates, solubility of, in solutions of phosphoric acid, 684.

— potassium thiosulphate, 12.

salts, effect of, on the coagulation of the blood, 87, 1112.

- - estimation of, in syrup and sugar products. 1377.

- sodium imidosulphonate, Trans., 968.

 strontium, and barium, separation of, 660.

- volumetric estimation of, 1521. Calorimetric bomb, modified form of.

 use of compressed oxygen in, 673.

Camphene, 868. - and camphoric acid, 868, 1240, 1481. constitution of, 858, 868. Camphenol, properties of, 199. Campherylparatolylhydrazine, 1481. Campherylphenylhydrazine, 1431. Camphocarboxylic acid, 201. Camphoic acid, constitution of, 866. Campholamine, 1345. Campholenic acid, 1237. — oxidation of, 1237. — reduction of, 1238. Campholic acid, 1345. - action of potassium hypobromite on the amide of, 1345. --- constitution of, 866. Campholonitrile, 1345. Campholyl isocyanate, 1345. Campholylamine, 1346. Campholylcarbamide, 1345. Camphonitrile, 1237. Camphor, action of sodium alkyloxides on, 72. and fenchone series, 1236. -- behaviour of, in mixtures of two solvents, 1137. constitution of, 203, 724, 865, 869. — dibromo-, reactions of, 1343. - production of, 1:2:4-acetylorthoxylene from, Proc., 1891, 188; 1892, 54. Camphoric acid, action of various reagents on, 1100. and camphene, 868, 1240, 1481. - constitution of, 202, 348, 500, 627, 865, 869, 1041, 1100, 1346, 1347; TRANS., 1096. — — function of, 1346. — hydrazones of, 1481. ---- methyl salts of, TRANS., 1088. new acid from, Proc., 1892, 55, 68. - -- thermochemistry of, 1041. Camphor-group, 724, 1343. Camphorone, 626; Proc., 1891, 188; 1892, 54. Camphors and their compounds with chloral, physiological action of, 227. Camphosulphophenols, ethylnitroketone and acetylnitroketone from, 1085. – nitroketone from, 999. Cancer pagurus, blood of, 648. Cantharene, 1480. Cantharidin, action of phenylhydrazine on, 999. Caoutchouc, spontaneous conversion of isoprene into, 1482. Capillary constants of salts at their melting points, 7.

Capillary phenomena, application of, to the analysis of liquids, 236. Caprylaldehyde, constitution of, 293. Caproic acid, dibromo-, decomposition of, 960. Capryl icdide, action of, on trimethylamine, 806. Capsaicin, 1263. Capsicum annuum, fruit of, 1263. Carbamic acid, occurrence of, in horse's urine, 518. Carbamide, action of phenylhydrazine on, 1323 - crystallisation of, by sublimation, 1309, -- volatility of, 1309. Carbanide. See also Urea. Carbamido-acids, 827. Carbaminethioacetophenone, 1317. Carbamine-β-thiolactic acid, 440. Carbanilidothiophenantialdoxime, 1435. Carbanilidothiophensynaldoxime, 1435. Carbaniltolylurethane, thio-, 600. Carbazacridines, 617. Carbazides, semithio-, bisubstituted, Trans., 1012. Carbazole, 616, 1466. ---- amido-, 616. --- behaviour of, towards carbonyl chloride, 167. diamido, synthesis of, 480. Carbin cyanide (methyl cyanide), 132. Carbodiparatolylamide, ism of, 1452. stereoisomer-Carbodiphenylimide, stereoisomerism of, 1452. Carbohydrates, action of the bacillus of malignant ædema on, 91. assimilation of, 742. — classification of the, 1066. colour reactions of, 664. - estimation of, in vegetable products, 248. - influence of, on the accumulation of asparagine in plants, 91. — of putrefying human urine, 226. - production of acetic acid from 1421. thermochemistry of, 763. Carbon, action of, on sodium sulphate in presence of silica, 565. action of, on sulphurous anhydride at high temperatures, 681. allotropic states of, 405. amorphous, allotropism of, 945. - and silica, action of, on chromic fluoride, 20. - and silicon, compounds of, 1050. --- bisulphide, detection of in toxicological cases, 1520. - - flame, experiments on, TRANS.,

216.

Carbon bisulphide, toxic action of, 1520. bivalent, 1438. ---- chlorobromides, 771. - deposited from coal gas flames,

Proc., 1892, 46. --- diiodide, 1291.

---- estimation of, in iron, 913, 1030. - examination of various forms of,

 oxysulphide, preparation of, 15. — peculiar form of, 565.

Carbon-chains, closed, synthetical formation of, Trans., 36, 67.

Carbonic anhydride, absorption-coefficient of, in water and in alcohol, 1044. atmospheric, estimation of,

- --- combined and free, apparatus for the estimation of, 531.

— in the urine, 649.

- influence of oxygen on the separation of, in the lungs, 1369.

ncw isothermal curves for, 3. reactions of, at high pressures,

 supersaturated aqueous solutions of, 1274.

anhydride - regenerator - gas, reconversion of heat into chemical energy by production of, 673.

Carbonic oxide, absorption coefficient of, in water, 1043.

- absorption of, by the blood of a living mammifer, 743.

- - action of, on iron and manganese, 568.

 and oxygen, influence of steam and other gases on the combustion of, 274.

— — detection of traces of, 99.
— — estimation of, 1128.

Carbonic-oxide-hæmoglobin, solutions of, Trans., 159.

Carbonylchloroplatinite, derivatives of,

Carbonylphenyl-\beta-naphthylthiocarbamide, 984.

Carbonylphenylparatolylthiocarbamide,

Carboparatoluidobenzantialdoxime,

Carboparatoluidobenzsynaldoxime, 1435. Carboparatoluidofurfursynaldoxime, $143\bar{4}$.

Carborthotoluidothiophensynaldoxime,

Carbostyril, bromopseudochloro-, 630. Carboxyantiglyoxime, 816.

Carboxy-a-hydroxycinnamic lactone. ortho-, 857.

Carboxyphenylglyceric acid, ortho-, δlactone of, 857.

Carboxypimelic acid, a., 428.

Carboxysynglyoxime, 816.

Carnallite, extraction of rubidium and cæsium compounds from, 1395.

Carrots, cooked, composition of, Trans.,

Carvacrol, behaviour of, towards reducing agents, 157.

- bromamido-, 595.

---- bromo-derivatives of 156.

derivatives of, 309, 1312.

— preparation of, 1311.

Carvene, constitution of, 1350.

Carvole, derivatives of, 499.

Cascarin, 1483.

Cassia, oil of, estimation of cinnamaldeliyde in, 924.

Catechol in the urine of hydrophobic rabbits, 1115.

 sodium derivatives of, 1184, 1185. — thermochemistry of, 764.

Cauliflower, cooked, composition of, Trans., 227.

Celery, cooked, composition of, Trans., 227.

Celestine from Scharfenberg, 1406.

Cell, Latimer Clark standard, practical form of, 669.

Cell. See also Battery, Galvanic Cell. Cell-membranes, vegetable, 907. Cellulose, 693.

- benzoates, 693.

- colloïdal solutions of, Trans., 156.

- dissolving enzyme in the digestive tract of certain animals, search for a, Trans., 352.

- estimation of, 923.

- nitrates, action of alkaline solutions on, 692.

- production of acetic acid from, 1421,

- sulphite-, dextrose from, 801. --- thermochemistry of, 764.

Cellulose-gum, 129.

Celluloses, 907.

Cereals, development of, 1119.

Cerium-earths, 1400.

Cerium-group, separation of the metals of, 686.

- spectroscopic researches on, 686.

Cerotic acid, bromo-, 1302. Cerous oxide, reaction for, 239.

Cetyldeoxybenzoïn, 1224.

Chabasite from the Faroe Islands, 1408. Change, interval of, 1145.

Cheese, estimation of fat in, 392.

Chemical action at a distance, 268, 269.

- phenomena, application of the second law of thermodynamics to, 3. - at very low temperatures,

1138.

Cherry laurel, occurrence of manuitol and sorbitol in the fruit of, 908.

Chestnut-wood tannin, 716.

Chloral, action of hydroxylamine on,

- bornylate, 228.

condensation of, with paraldehyde and ketones, 694.

- menthylate, 228.

Chloralacetone, 694.

Chloralacetophenone, 695.

Chloralaldol, 695.

Chloraldoxime, 33.

Chloralhydroxylamine, 699.

Chloralimide, 134.

— dimolecular, 134.

— trimolecular, 134.

Chloranilic acid, action of halogens on,

and bromanilic acid, compound of, Trans., 574.

- crystallography of the sodium salt of, Trans., 583.

Chlorates, iodometric estimation of

chloric acid in, Trans., 87. Chlor-a dibromhydrin, action of zine-dust and alcohol on, 1293.

Chloric acid, estimation of, 236.

- - iodometric estimation of, in chlorates, Trans., 87.

— volumetric estimation of,

1375.

Chlorides, estimation of, 527.

- metallic, action of magnesium on,

physical properties of solutions of, Trans., 339.

Chlorine, active, in bleaching powder, estimation of, 1374.

— and bromine, detection of, in presence of iodine, 1514.

- - relative orienting effect of, Proc., 1892 40.

- and oxygen, reaction of, with hydrogen, 1147.

-- bromine, and iodine, exchange of. between inorganic and organic haloïd compounds, 574.

separation of, 1028.

- direct combination of, with metals,

- measurement of light intensity by the expansion of, 253.

- separation of, from mercury and phosphoric and arsenic acids, 530.

use of platinous chloride as a source of, TRANS., 445.

Chlorite, manganiferous, from Harstigen Mine, Sweden, 1411.

Chlorite-group, theories of the structure of, 794.

Chlorites, constitution of, 125.

Chloritoïd from Michigan, 793.

Chlorocruorin, 1256.

Chloroform, action of alkali sulphides on, 421.

- impure, physiological action of, 744.

- peculiar phenomena in the solidification of, 1138.

Chlorophyll, 1355.

formation of, 1261, 1372.

- substances accompanying, in leaves,

Chlorophyllane, nature of, 1136.

Chlorophyllic extracts, analysis

- substances of the pericarp of the grape, 874.

Chlorosis, treatment of, with hydrochloric acid, 1117.

Cholesterol, estimation of, 248, 544.

vegetable, 1294.

Cholic acid, 741.

Choline, action of hydriodic and hydrobromic acids on, 808.

- and neurine, relations between, 219.

derivatives of, 806, 905.

— in cotton-seed foods, 380.

Chromammonium salts, 782.

Chromates, volumetric estimation of,

Chrome-iron-ore, analysis of, 1031. decomposition of, 240.

Chrome-tourmaline from Maryland,

Chrome-yellows, analysis of, 663. Chromic acid, Trans., 405.

— estimation of, 103, 538.

-- anhydride, action of sulphur on, 770.

- chloride, solutions of, Trans., 153. — hydrate, colloïdal solution of, Trans., 154.

 hydrogen potassium pyrophosphate, 1053.

oxide, estimation of, 104.

- sulphate, green, 411.

— isomeric forms of, 411.

Chromite, analysis of, 1525.

Chromium ammonium thiocyanate, derivatives of, 798.

- estimation of, in chromium-aluminium alloys, 1131.

— estimation of, in steel, 538.

metallic, attempts to prepare, from chromic fluoride, 19.

- salts, action of heat on solutions of, 571.

test for, 1133.

Chromium-bases, constitution of, 783.

Chromosulphuric acid and its salts, 783. Chrysaniline, action of methyl iodide and hydroxide on, 1095. - azo- and alkyl compounds of, and the dyes therefrom, 1095. Chrysanthemine, 84. Chrysanthemum cinerariæfolium, constituents of the buds of, 349. - flowers, new alkaloïd from, 84. Chrysidines, a- and β -, and their derivatives, 198. Chrysophanic acid, 1354. Cicuta maculata, examination of, 232. Cincholine, 1492. Cinchona alkaloids, 1249. — alkyl derivatives of, 1012. - - compounds of, with hydriodic acid, 83. - halogen derivatives of, 1010. - - hydriodo-compounds - —— sulphonic acids of, 514. Cinchonic acid, alkyl and alkylene derivatives of, 1488. - - ethiodide, 1490.
- ethobromide and ethochloride, 1489. — ethylbetaïne, 1490. — methobromide, methochloride, and methiodide, 1489. — methylbetaine, 1489. — propobromide, 1491. Cinchonidine benzyl salts, 1251. - compounds of, with hydriodic acid, - ethiodides and methiodides, 1251. Cinchonidinesulphonic acid, 515. Cinchonine, 892. action of hydriodic acid on, 514, 639. — chloride, 1011. ---- hydrochloro-, 1011. - compounds of, with hydriodic acid, 83. — dichloro-, 1011. —— diethyl salts, 1252. ethocyanide, 1251. --- hydriodo-, salts of, 1363. Cinchoxinic acid, alkylene derivatives of, 1488. Cineolic acid, 1480. — constitution of, 866. —— allylamide, 1480. ---- diethylamide, 1480. --- paratoluidide, 1480. – phenylhydrazide, 1480. — piperidide, 1480. Ciunamaldelivde, estimation of, in oil of cassia, 924. Cinnanidiureïde, 57. Cinnamene, condensation of, with phenols, 446.

Cinnamene, triiodo-, 470. Ciunamenyloxazoline, μ -, 215. Cinnamenylpentoxazoline, μ -, 215. Cinnamic acid, condensation of, with hydrocarbons, 1228. -condensation of, with phenols, 848. - - refractive power of, at different temperatures, Trans., 306. - acids, isomeric a-bromo-, Trans., 278. stereoisomeric and polymeric, 469. — diphenylhydrazide, 981. Cinnamon, oil of, 1509. Cinnamylidencorthamidophenol, 1452. Cinnamylideneparanidophenol, 1451. Cinnamylphenylazimide, formation of, Trans., 282. imide of, Trans., 283. - reduction of, Trans., 284. Cinnamyltetrahydroketonaphth quinoxaline, 886. Cinnamyltetrahydroketoquinoxaline, Cinnoline, chloro-, 1494. - derivatives of, 1494. Citraconic acid, conversion of, into its isomerides by soda, 297. Citrates, alkali, 149. Citrazinie acid, TRANS., 1008. Citric acid, 824. anhydro-derivatives of, TRANS., 1003. detection of tartaric acid in, 546. — dissociation constant of. Trans., 708. separation of malic acid from, 1531. thermochemistry of, 763. Citronellic aldehyde, 1068. Citrus bergamia, stearoptene from the oil of, 71. Clamps for gas analysis apparatus, 524.Clay, chromiferous, from Brazil, 1057. Clover, red, assimilation of free nitrogen by, 373, 374. Cloves, oil of, valuation of, 250. Coagulation and calcium salts, 1112. - of the blood, 87, 1112. Coal, action of dilute nitric acid on, Proc., 1892, 9 - formulæ for calculating the heating power of, 1143. heats of combustion of products of the distillation of, 395.

Coal, valuation of, for use in steam boilers, 668. Coal-dust explosions, lecture experiment to illustrate the phenomena of, TRANS., 414. Coal-gas flames, carbon deposited from, Proc., 1892, 46. - experiments on, Trans., 205, 210. - formation of sulphuric acid in, 1374. - luminosity of, TRANS., 322. - formation of sulphuric acid and ammonium sulphate by burning, 1151, 1389. Cobalt, action of nitric acid on, 1279. ---- action of nitric oxide on, 1152. — atomic weight of, 1159. --- chloride, hydrates of, 569, 571. vapour pressure of aqueous solutions of, 263. - - variations in colour of, 569, 570. — detection of, 1525. --- estimation of, in manganese ores, 917. ---- fluoride, 1160. - fluoroxyl ypovanadate, 787. ---- mercuric thiocyanate, 10. ---- nitro-, 1390. --- occlusion of hydrogen by, 567. — potassium fluoride, 782. reactions of, 1132. ---- salts, action of alkaline polysulphides on, 537. — colour of solutions of, 278. --- separation of iron from, 103. - separation of manganese from, - sulphate, anhydrous, 941, 1283. Cobalt-bases, constitution of, 783. Cobra poison, 1118. Cocaïne hydrogen diaminechromiumthiocyanate, 1001. Coca leaves, Javan, alkaloïd from, 361. Coco-nut fat, detection of, in butter, 391. Codeïne, reactions of, 756. Codeïne-violet, 360. Coffee substitutes, analysis of, 1534. Collidine, preparation of, 725. Colloid solutions, nature of, 766. - pedetic motions in relation to, Proc., 1892, 17. Colour and constitution of compounds, - appearance of, in quinoline derivatives, Trans., 789. - as an evidence of isodynamic change, Proc., 1892, 103.
— origin of, Proc., 1892, 101,

103; TRANS., 789.

Colour-photometry, Proc., 1891, 150. Combustion, incomplete, analysis of the products of, 407. of carbonic oxide and oxygen, influence of steam and other gases on, 274.slow, of gaseous mixtures, 938. Combustion-furnace, new, 1514. Compounds, double, solubility of, 1047. Compressibility and indices of refraction of liquids, relations between, 669. - of saline solutions, 766. Concentration, effect of, on alcoholic fermentation, Trans., 369. Condensation and evaporation, spheres of, 1149. Condenser, new, 400. Conductivity. See Electrical Conductivity. Condurangin, 1352. Congo-red, colloïdal solutions TRANS., 156. Constitution and colour, relation between, Proc., 1892, 101, 103; TRANS., 789. Contact, potential, differences of, 553. Conyrine, oxidation of, 1104. Copaiba, estimation of volatile oil in, Copiapite, 1408. Copper, action of chlorine and of bromine on, 118. action of nitric oxide on, 1152. ---- ammonium sulphate, 1399. — and cadmium, separation of, 534. --- apparent variability of the electrochemical equivalent of, 105. chloride, ammoniacal, action of potassium cyanide on, 1065. - — measurement of the vapour pressures of solutions of, TRANS., 775.

solubility of, in various organic liquids, 558. electrolytic detection of, 541. ---- electrolytic separation of mercury from, 239. --- estimation of, by de Haen's (Brown's) method, 753. — estimation of, in aluminium, 1131. —— formate, 140. ---- hydrosulphides, Trans., 120. — lowering of the freezing point of bismuth by, Trans., 893.
— lowering of the freezing point of cadmium by, TRANS., 898. - lowering of the freezing point of lead by, TRANS., 905. - mercuric thiocyanate, 10. --- nitrate, basic, decomposition of, by

water, 1272.

nitride, supposed, 409.
 nitro-, 1390.

Copper, nitrosonaphtholsulphonate 346. - occlusion of hydrogen by, 567. ---- oxalate, 1431. - and pyridine, compound of, ---- oxide, anhydrous, 1399. ---- permolybdate, 1160. ---- phosphides, 410. --- precipitation of, by iron, 276 —— red, estimation of sulphur in, 753. - reduced, retention of hydrogen and carbon by, 942. - crystallised anhydrous, 941, - solutions, dilute, cryoscopy of, 1045. —— sulphite, basic, 1051. —— sulphites, 1051. Copper. See also Cuprous. Copper-glance, oxidation of, by the electric current, 239. Cordierite as contact mineral, 1056. Corn-cockle, metabolism in pigs fed on, 1018.Corycavine, 1367. Corydaline, 1366; TRANS., 244, 605. action of hydrogen iodide on, TRANS., 609. - allyl iodide, Trans., 249. --- ethyl sulphate, Trans., 607. — hydriodide, Trans., 246. - hydrobromide, Trans., 607. methiodide, Trans., 243. ---- platinochloride, TRANS., 247. Corydalis cava, alkaloïds of the root of, 1366.tuberosa, alkaloïd from, TRANS., 244, 605. Coto bark, constituents of, 60, 873. Cotonoleïc acid, 584. Cotton plant, chemical study of, 1510. - feeding value of, 1510. Cotton-seed foods, choline and betaine in, 380. - oil, constituents of, 584. — products, 584. Coumarin, derivatives of, 988. — thio-, and its analogues, 329. Coumarone, reduction of, 1318. Cream, estimation of fat in, 392. Creatinine, estimation of, in urine, · influence of muscular work on the elimination of, 364. Cresyl orthacetates, meta-, ortho-, and para-, 308. Crocoïte, synthesis of, 792. Crops, assimilation of phosphoric acid by, 233.

- leguminous, sources of the nitrogen

of, 367.

Crotonaldehyde, action of suphurous anhydride on, 424. - preparation of, 809, 1423, 1424. Crotonaldoxime, 33, 580. - dichloro-, 34. Crotonanilide, amido-, 965, - β-amido-, 708. Crotonic acid, oxidation of, 957. - acids, bromo-, 961. Crustaceæ, blue colouring matter of the blood of, 898. Cryoscopic behaviour of dilute solutions, 8, 678, 1045. - determinations, 765. Cryoscopy of cane-sugar solutions, 109, 678, 1046. - of dilute alcohol solutions, 1045. - of dilute calcium chloride solutions, 1045. - of dilute calcium nitrate solutions, 1045.

— of dilute copper sulphate solutions, 1045. - of dilute ether solutions, 1045. - of dilute sodium chloride solutions, 1045. of dilute urea solutions, 1045. Cryptogams, assimilation of free nitrogen by, 370, 378. Cryptopine and its derivatives, Proc., **ĭ891**, 166. Crystallisation, water of, 581. Crystals, artificial colouring of, 269. - influence of foreign substances on the form, purity, and size of, 937.
— mixed, 1048. — — formation of, 10. — solubility of, 265, 266, 560. - theory of the structure of, 572. Cucumbers, cooked, composition of, Trans., 227. Cumarhydrin, para-, 873. Cumenylacrylic acid, nitration of, 43. Cumic acid, paradibromo-, 605. Cumindiureïde, 57. Cuminylanilide, 489. Cumonitrile, propoxy-derivatives of, Cumylphosphinic acid, ψ -, 1085. Cuprammonium acetobromide, 953. – oxalate, 1431. Cupreïne, 1253. - behaviour of, with methyl iodide, 221, 892. - conversion of, into quinine, 1010. Cuprodescloizite from Mexico, 1055. Cuprous acetylide, 1416. preparation of, 421. iodide and ammonium thiosulphate, compounds of, 1157.

--- sulphite, 1052.

Current reversal, 759. Curvature, the recognition of changes of, by means of a flexible lath, 767. Cusparia trifoliata, constituents of, 642. Cusparine, 643. Cusparidine, 643. Cyanacetophenone, action of hydroxylamine on, 324. - and its derivatives, 324, 845. Cyanacetothienone, 304. Cyanacetylaniline, 1072. Cyanacetylbenzylamine, 1072. Cyanides, condensation of, with ethereal salts, 431. Cyanobenzoic acid, parabromometa-, Cyanobenzoylacetone, α -, 451. Cyanocamphor, azo-derivatives of, 1343. Cyanocarbamides, 702. Cyanocinnamic acid, α-, 1087. Cyanogen flame, experiments on, TRANS., 215.Cyanomethæmoglobin, 361. Cyanonitrometaxylene, 1437. Cyanoparatolylformamidine, 707. Cyanophenylformamidine, 707. Cyanothiocarbamides, 702. Cymene, oxidation of, 724. - synthesis of, 1310. Cystein, 1111. Cystin, 1111. presence of, in the horse's liver, **526.** D.

Darapskite, 124. Datura stramonium, alkaloïds of, 232. Daturic acid, bromo-, 582. salts of, 582. Daturone, 582. Decacetyldiglucoheptose, 1167. Decamethylenediamine, 1181. Decamethyleneimine, 1181. Decyl acetate, bromo-, 691. - benzoate, chloro-, 691. Decylacetylene, 1164. Decylene and its derivatives, 691. - glycol, 691. Dehydracetic acid, 584. - — bromo-, 584. - --- constitution of, 587. ---- oxy-, 585. preparation of, 296. - chloride, 587. Dehydracetylpæonol, 846. Dehydrocholic acid, 741. - chloro-, 741. Dehydrocinchen dibromide, 1012. Dehydrocinchonine dibromide, 1011. Dehydrodiacetovanillone, 61.

Dehydrodiacetyllevulinic acid, action of ammonia on, 1429. - action of benzaldehyde on, 1429. - action of hydroxylamine and phenylhydrazine on, 1429. — hydrazone, 1429. - oxime, 1429. Dehydrodiacetylpæonol, 845, 846. Dehydrodiacetylresacetophenone, 846. Dehydrodypnopinacolin, 995. Dehydromethylacetylpæonol and its derivatives, 846. Dehydronicotine, 1010. - dibromo-, 1497. Dehydrothiotoluidine, synthesis of, 839. Density, maximum, of water, 7. - molecular weight, diathermanous power, and refractive index of a substance, relation between, 1. - of liquefied gases and of their saturated vapours, determination of, 934, 1043. Deoxybenzoin, action of paramidodimethylaniline on, 855. --- chloro- and diiodo-, 451. derivatives of, 1227. – parachloro-, 1227. paranitro-, 1227. - preparation of, 1095. sodium derivative of, 171. Deoxybenzoïns, 338. Deoxyfulminuric acid, 1417. Deoxystrychnic acid, 1014. Deoxystrychnine, 1013. Desaurin, 1095. - action of sulphuric acid and of aniline on, 1096 - parachloro-, 1227. Desaurins, new method of formation of, Desiccator, new form of, 524. Desmine- and heulandite-groups, relations between minerals of the, 417. Desylacetic acid, 1002. Dextran, thermochemistry of, 764. Dextrin, action of alkaline mercuric cyanide on, 1032. - estimation of, in beer and beer wort, 248. preparation of, 577. Dextrins, fermentability of, 922. Dextrose, action of alkaline mercuric cyanide on, 1032. - cane-sugar, and invert-sugar, examination of mixtures of, 248.

- disappearance of the multirotation

- estimation of, in beer and beer

- estimation of, in vegetable pro-

of, in ammoniaeal solution, 1419.

wort, 248.

ducts, 249.

Dextrose, fermentation of, with Bacillus ethaceticus, TRANS., 436.

from sulphite cellulose and from

fir wood, 801.

 obtained from cane sugar by means of invertase, specific rotatory power and cupric-reducing power of, Trans., 408.

Dextrose. See also Glucose.

Dextrose-series, ascent of the, 1164.

Dextroso-cellulose, 907.

Diabase, products of the weathering of, 1412.

Diabetes, artificial production of, 364.

— variations of glycolytic and sac-

charific powers of blood in, 517. Diabetic, behaviour of milk sugar in a,

Diacetallylthiocarbamide, 1327.

Diacetin, preparation of, 289.

Diacetodiketohexamethylenedicarboxylic acid, 586.

Diacetohydroxamic acid, 699.

Diacetonamine platinothiocyanate, 287. Diacetophenonethylenediphenyldi-

amine, 633.

Diacetoxydiphenyl sulphoxide, 1077.

Diacetyl, preparation of, 425.

Diacetylacetone, TRANS., 825, 858.

--- chlorinated, 811.

— refractive and dispersive powers of, TRANS., 860.

Diacetylamidoethenylamidocarvacrol, 309.

Diacetyl-1: 4-amidonaphthol, 862. Diacetylchloralammonia, trimolecular,

134.
Diacetyldiamidotoluene, dinitro-, 1197.

Diacetyldiamylquinol, 1444.

Diacetyldiisoeugenol, 46.

Diacetylglycerol, 288.

---- chloro-, 289.

Diacetylindigotin, 480.

Diacetylisoeuxanthone, 504.

Diacetylmetachlorobromoquinol, Trans.,

Diacetylmetadichlorobromoquinone, Trans., 567.

Diacetylmetadichlorodibromoquinol, Trans., 580.

Diacetylmetadichloroquinone, TRANS.,

Diacetylmetapropenylcatechol, 973.

Diacetylmetapropenylcatechol, 3 Diacetylmethylenediamine, 579.

Diacetylnitro-xylidine, 1437.

Diacetylorthodiamidotoluene, nitro-, 1197.

Diacetylorthodiamines, 1197.

Diacetylparadichlorobromoquinol, TRANS., 565.

Diacetylpiperazine, 211.

Diacetyl- β -resorcylonitrile, 317.

Diacetylrubbadin, 1076.

Diacetyltartaric acid, stereochemistry of, 669, 758, 759.

Diacetyltartaric-derivatives, rotatory power of, 669.

Diacetyltrichlorobromoquinol, Trans., 593.

Diallylacetone, 435.

Diallylacetonedicarboxylic acid, 435.

Diallyldithiotetrahydrotriazole, 292.

Diaminechromium hydrogen thiocyanate, compounds of nitrogenous bases with, 1000.

Diamines in diseases, 518.

---- ortho-, 1472.

———————action of formaldehyde on, 1496.

— and α-hydroxy acids, constitution of the compounds obtained from, 1359.

Diammonium imidosulphonate, Trans., 946.

Diamond, artificial corrosion of, 1394.

- specific heat of, 761.

Diamonds, discovery of, in meteoric iron, 284.

Diamylamine, chloro-, action of sodium and potassium cyanide on, 804.

Diamylcatechol, 1445.

Diamylcyanamide, 804. Diamylpyrogallol, 1445.

Diamylquinol, 1443.

--- phenylcarbamate, 1444.

Diamylquinone, 1444.

Diamylresorcinol, 1444. Dianildicyandiamide, 1323.

Dianilidobenzene, para-, derivatives of, 1450.

Dianilidodimetanitrobenzophenone, para-, 336.

Dianilidosuccininanilide, acetyl derivatives of, 55.

Dianisylditrosacyl, 971. Diapocinchonine, 1253.

Diargentic sodium imidosulphonate, Trans., 975.

Diarrhœa, sulphates and ethereal hydrogen sulphates in urine during, 1505.

Diastase, 92.

Diastatic action, TRANS., 689.

Diathermanous power, refractive index, density, and molecular weight of a substance, relation between, 1.

Diazinedicarboxylic acid, 507.

Diazoamidobenzene, action of paratoluidine on, 978.

— meta- and para-dichloro-, action of paratoluidine on, 978.

Diazoamido-compounds, 977.

----- action of acetic anhydride on, 458.

Diazoamido-compounds, action of aniline hydrochloride on, 979.

Proc., 1892, 119.

Diazoamido-ψ-cumeue, action of paratoluidine on, 978.

Diazoamido-ψ-cumeneparatoluene, 979. Diazoamidometachlorobenzeneparatoluene, 979.

Diazoamidoparachlorobenzeneparatoluene, 979.

Diazoamidotoluene, ortho-, 459.

Diazobenzaldehyde, ortho-, 1106.

Diazobenzene, action of, on acetonedicarboxylic acid, 161.

chloride, action of benzaldoxime on, 163.

--- perbromide, 316.

Diazobenzenamidocarbazole, 617. Diazobenzeneglyoxaline, 1493.

Diazobenzene-β-naphthylamine, action of dimethylaniline on, 980.

Diazobenzenepiperazine, 211.

Diazo-compounds, action of oximes on, 163, 1079.

———— new synthesis by means of, 1198.

by water, 768.

Diazodibenzylamine, ortho-, 890.

Diazoguanidine salts, 1298.

Diazohippurylamide, 113.

Diazonaphthalene salts, nitro-, decomposition of, with alcohol, 622.

Diazonaphtholsulphonic acid, 721.

Diazonaphthylenesulphonic acid [1:2], 345.

Diazotoluene chloride, para-, action of hydroxylamine on, 710.

Dibenzamide, imido-, 713.

Dibenzenesulphonediphenetidine, 65. Dibenzenesulphoneorthotoluylenedianine, 66.

Dibenzenesulphoneparaphenylenediamine, 65.

Dibenzenylazosulphime, 1109.

Dibenzimidine, 1110.

Dibenzoyldihydroxyanhydroecgonine, derivatives of, 1016.

Dibenzoyldiisoeugenol, 46.

Dibenzoyldiorthohydroxystilbene, 168.

Dibenzoylorthohomosalicenylamidoxime, 320.

Dibenzoylparahomosalicenylamidoxime, 319.

Dibenzoylpyridine, 1365.

Dibenzovlstilbene, action of phenylbydrazine on, 995. Dibenzyl ketone, 851.

Dibenzylacetoacetic acid, 963.

Dibenzylamidosulphonic acid, 476.

Dibenzylamine nitrate, 476.

— paradinitrorthodichloro-, 445. Dibenzylaniline, paradinitrorthodichloro-, 445.

Dibenzylcarbamic chloride, 1083.

Dibenzylcarbinamine, 1093.

— dibenzylcarbinaminethiocarbamate, 1094.

Dibenzylcarbinol, 851, 1094.

Dibenzylcyanocarbamide argentocyanide, 1084.

Dibenzyldiphenylsuccinonitrile, symmetrical, 619.

Dibenzylditolylcarbamide, 1083.

Dibenzylene dicyanide, 619.

Dibenzylidene-2: 6-lutidine, 1361.

Dibenzylidenenitrotolidine, 852.

Dibenzylideneparadiamidodiphenylmethane, 618.

Dibenzylorthodiamidotoluene, nitro-, 1197.

Dibenzylphanylhydrogina diorthoni

Dibenzylphenylhydrazine, diorthonitro-, 1456.

Dibenzylpimelic acid, $\omega\omega'$ -, dissociation constant of, Trans., 702.

Dibenzylpyridine, 1364.

Dibenzylsulphonemethane, 612. Dibenzylsulphonephenylmethane, 623.

Dibenzylsulphonethiobenzylmethane, 612.

Dibornylamine, 1238.

Dibornylthiocarbamide, 1238.

Dicalcium phosphate, crystallisation of, 407.

phosphoric acid, 684.

Dicampholylcarbamide, 1345.

Dicarboxyglutaconic acid, Trans., 791.

Dichlorhydrin metahydroxybenzoate, an isomeric, 471.

Dicresol, 1467.
—— nitro-, 852.

Dicresoldisulphonic acid, 1467.

Dicyanacetylethylenediamine, 1071. Dicyanacetylpentamethylenediamine,

1071. Dicyanonaphthalene [1 : 2], 1477.

Dicyanophenylhydrazine, action or ethyl acetoacetate on, 597.

condensation of, with fatty aldehydes, 596.

Dicyanostilbene, 618.

Didymium spectra, 686.

Dielectric power and electrolytic conductivity, coexistence of, 759.

Diethoxydiamidodiphenylamine, 314.

Diethoxydimethyldiamidophenazine, 315.

Diethoxydiphenylcarbamide, 833. Diethoxydiphenylenedinitrosacyl, para-, 972.

Diethoxysulphophenylhydrazide, para-, 1082.

Diethyl camphorate, 500, 1102.

- dichlorobenzoparadifurfuran-α-dimethyl-β-dicarboxylate, para-, 609.

 diphenylazimethylenedicarboxylate, 453.

- furfuryllutidinedicarboxylate and its salts, 1362.

 hydrofurfuryllutidinedicarboxylate, 1362.

– isocamphorate, 501.

--- malonate, action of methylene iodide on, 1304.

- quinoneparadifurfuran - α - di methyl-β-dicarboxylate hydrochloride, 610.

- sulphoxide, diamido-, picrate of,

Dietlylamidocaproic acid, 294.

Diethylamidophenylarsine oxide, 1321. Diethylamine platinothiocyanate, 286.

Diethylaniline, action of silicon tetrachloride on, TRANS., 457.

Diethylcamphor, 200.

Diethyldiamidoquinoxazone, 888. Diethyldithiophosphinic acid, 1422.

Diethylethoxydiphenylsulphonephenylenediamine, 161.

Diethylidenecinchonine, 1252.

Diethylidenecinchoxine, 1252.

Diethylorthotoluidine, paramido-, 1078. Diethylpentanetetracarboxylic acid, dissociation constant of, Trans., 704.

Diethylphenylformamidine, 707.

Diethylpimelic acid, $\omega\omega'$ -, dissociation constant of, Trans., 701.

Diethylpiperazine, 212. Diethylpiperidine, 1358.

Diethylpropargylamine hydriodide, 30. Diethylquinol, trinitro-, action of dimethylmetadiamidobenzene and of anaphthylamine on, 315.

- action of dimethylparamidobenzene on, 315.

 action of paradiamidobenzene on, 314.

Diethylsulphonephenylsulphonemethane, and its chloro- and bromo-derivatives, 613.

Diethylsulphonephenylsulphonemethylmethane, 613.

Diethylsulphonethiophenylmethylmethane, 613.

Diethylthiocarbamide, unsymmetrical,

Diethyltoluylenediamine, 66.

Diffenchyloxamide, 1239.

Difenchylthiocarbamide, 1239.

Diffusion and electrolysis, theory of, 935. of aqueous solutions, 1265.

Diformylparadianilidobenzene, 1451.

Difurfurylcarbamide, 43.

Difurfurylthiocarbamide, 43.

Difurylhydroxycyanidine, 1008.

Difurylmethylcyanidine, 1006. Difurylnaphthoquinoxaline, 1475.

Difurylquinoxaline, 1475.

Difuryltoluquinoxaline, 1475.

Digestibility of raw and boiled meat, 1367.

Digestion and absorption of fat oils by plants, 1118. - gastric, influence of amido-acids

on, 742.

— of carbohydates, 742.

--- of pentose carbohydrates, 645.

of starch by dogs, 516.

 peptic, influence of wine on, 87. Digestive ferments in crustacean eggs,

- tract of certain animals, search for a cellulose-dissolving enzyme in, Trans., 352.

Digitaleïne, 222.

Digitaligenin, 1482.

Digitalin, 1482.

Digitalonic acid, 1241. · lactone, 1242, 1482.

Digitalose, 1482.

Digitogenin, preparation of, 1483.

Digitonin, 501.

Dihydrazidopimelic anhydride, 435. Dihydrazineditolyldisulphonic acid.

Dihydriodoapoquinidine, 640.

Dihydriodocinchonine, 514, 639.

Dihydriodoquinidine, 640. Dihydroarecaïdine, 739.

Didydroarecoline, 739.

Dihydrobenzene, synthesis of, 1074.

 $\Delta^{3:5}$ -, Dihydrobenzyldimethylamine,

Dihydrocarveol, 499.

Dihydrocarvylamine, 499.

Dihydrodimethylnaphthylpropionic acid, 871.

Dihydroisosantinic acid, 871.

Dihydro- α -naphthoic acid, labile Δ^2 -,

- stable ∆¹-, 192.

Dihydro- β -naphthoic acid, labile Δ^3 -,

– stable Δ²·, 193.

Dihydroparaxylene, synthesis of, 1182. Dihydrophenanthridine, 197.

Dihydrophthalic acid, $\Delta^{1:4}$ -, 1216.

- trans- $\Delta^{8:5}$ -, 1214.

Dihydroquinazoline, 219. Dihydrosantinic acid, 871. Dihydroterephthalic acid, nitrile of, 834. Dihydrotrimethylindole methiodide, Dihydroximidopropionic acid, primary, - secondary, 816. Dihydroxyacridine, 1108. Dihydroxyaldehydes, aromatic, nitrogenous derivatives of, 317. Dihydroxyamylpiperidine aurochloride, Dihydroxyanhydroecgonine, 1015. Dihydroxyanisoil, dinitro-, 596. Dihydroxyaurindicarboxylic acid, 1469. Dihydroxybenzoic acid, 1:3:5-, action of chlorine on, 1461. - dichloro-, 1461. - ---- trichloro-, 1461. Dihydroxybutyric acid, 957. Dihydroxycaproic acid, salts of, 959. Dihydroxy-compounds, aromatic ortho-, reagent for, 1133. Dihydroxydiketotetrahydronaphthalene, 859. Dihydroxydinitrodiphenylamine, 310. Dihydroxydiphenyl sulphoxide, 1077. Dihydroxydiphenyldibenzylmethane, 851. Dihydroxyfluoran, 970. Dihydroxyhexamethylene, cistranspara-, Dihydroxyhydrobenzoïn, ortho-, 168. ——— diesoanhydride, 168. Dihydroxyhydrolapachol, Trans., 647. Dihydroxy- α -naphthaldehyde, β -ortho-1459. Dihydroxynaphthaquinone, 720. Dihydroxy-β-naphthaquinone, 494. Dihydroxynaphtho-xanthones, 1100. Dihydroxyorthocarboxyphenylpropionic acid, lactone of, 720. Dihydroxyperchloromethylcyanidine, Dihydroxy- α -picoline, $\alpha'\gamma$ -, Trans., 723. dibromide, Trans., 724. Dihydroxystilbene, ortho-, 168. Dihydroxytartaric acid, behaviour of, with sodium hydrogen sulphite, 148. Dihydroxythiobenzenes, 1316. Dihydroxythymoquinone, 1098. Dihydroxytoluene, synthesis of the sixth, 447. Dihydroxytriphenylmethane, meta-, paranitro-, 621. - para-, metanitro-, 620. --- orthonitro-, 621. - paranitro-, 621. Dihydroxytriphenylmethanedicarboxylic acid, ortho-, para-, and meta-nitro-,

621.

Dihydroxyvaleric acid, salts of, 959. Dihydroxyxanthone, bromo-derivatives of, 1226. Diimide, attempts to prepare, 1430. Dirsoamylselenocarbamide, 216. Diisoamylthiocarbamide, unsymmetrical, 216. Diisobutylallylamine, 31. Diisobutylamine, chloro-, 1173. Diisobutyleyanamide, 1173. Diisoeugenol and its derivatives, 45. Diisopropylpimelic acid, ww'-, dissociation constant of, TRANS., 702. Diketohexene, meta-, hexachloro-, 1461. - para-, hexachloro-, 447. pentachloramido-, 450. Diketohydronaphthalene hydrate, dichloronitro-αβ-, 1232. tetrachlorortho-, its hydrates and alcoholates, 858. Diketo- γ_1 -methyljulole, $\alpha_1\alpha_2$ -, 496. Diketones, action of bleaching powder and of hypochlorous acid on, 720. fatty 1:2-, preparation of, 425. Diketopentamethylenehydroxycarboxylic acid, tetrachloro-, 836. - trichloro-, 835. Dimethoxystilbene, ortho-, 719. para-, 719. Dimethyl camphorate, 1102; Trans., Dimethylacetobutylamine, 1244. Dimethyladipic acids, stereoisomeric, Dimethylalloxanhydrazone, 442. Dimethylamidoazobenzene, parabromo-, Dimethylamidocrotonanilide, β -, 708. Dimethylamidophenylarsine oxide, 1321. sulphide, 1321. Dimethylamidopropionic acid, 1302. Dimethylamidoquinoxazone, 888. Dimethylamine hydrogen diaminechromium thiocyanate, 1000. platinothiocyanate, 286. Dimethylaniline, action of, on ketones, - refractive power of, at different temperatures, Trans., 302. Dimethylapionylcarboxylic acid, 1315. Dimethylbenzimidazole [2:2'-], 632. Dimethylcinchonine, 892. Dimethylcyanidine, amido-, 1291. Dimethyldiamidodiphenyltolylmethane, paranitro-, 189. Dimethyldiamidoquinoxazone, 888. Dimethyldiazine, 507, 633. Dimethyldihydropentene methyl ketone, TRANS., 77. - ketoxime, TRANS., 79.

Dimethyldihydropentenedicarboxylic

acid, TRANS., 81.

Dimethyldihydroquinazoline, $\beta\gamma$ -, 218. Dimethydihydroxyglutaric acid, 437. - dilactone of, 437. lactone of, 436. acids, stereoisomerism of, 436. Dimethyldiketohexamethylene, 1183. Dimethdiphenylsuccinonitrile, symmetrical, 619. Dimethyldipiperidyl, 1487. Dimethyldipyridyl, $\beta\beta$ -, 629. Dimethyldiquinoyline, 1107. Dimethyldisalicylaldehyde, para-, 1459. Dimethyldithiotetrahydrotriazole, 293. Dimethylethylnaphthalene, 872. Dimethylethylsulphine, preparation of, 1422.Dimethylethylthymoquinol, 1312. Dimethylfraxetin, 628. Dimethylglyceric acid, a\beta-, from angelic acid, 297. Dimethylheptylethylene, a-, 133. Dimethylnexylcarbinol, 133. Dimethylhydroxybutyrolactonecarboxylic acid, 436. Dimethylhydroxyquinoline, 78. Dimethylisoxazole, $\alpha\gamma$ -, reduction of, 507. Dimethylmetamidophenol, nitroso-, 887. Dimethyl-a-methoxy-\mu-thiomethylimidazole, νβ-, 153. Dimethylmethylenehydrazine, 457. Dimethylmethyleneimidosulphonic acid, 701.Dimethylnaphthalloxazine, 70. Dimethylnaphthylpropionic acid, 871. Dimethylorthanisidine, action of nitric acid on, 159. Dimethylparethoxyphenylpyrazolone, 1080. ${\bf Dimethyl pentamethyl enemethyl carb-}$ inol, Trans., 79. Dimethylpentanetetracarboxylic dissociation constant of, Trans., 704. Dimethylphenylcyanidine, 1110. Dimethylphthalic acid, para, 872. Dimethylpimelic acid, $\omega \omega'$ -, dissociation constant of, TRANS., 701. - acids, stereoisomeric, 430. Dimethylpiperazine, 212. Dimethylquinoline, $\alpha\beta$ -, 1107. — amido-, 729. — nitro-, 729. Dimethylquinolone, 4-nitro-, 880. Dimethylquinitol, 1183. Dimethylracemic acid, 698. Dimethylrubbadin, 1077. Dimethyltetrahydroquinoline, 614. Dimethyl- Δ^2 -tetrahydropyridine, 1:2-, 1243.

Dimethylthetincarboxylic acid, 1433.

216.

Dimethylthetindicarboxylic acid, 1433.

Dimethylthiccarbamide, unsymmetrical,

Dimethylthiohydantoïn, 151. Dimethyltoluidine, ortho-, action formaldehyde on, 1320. Dimethyltriamidodiphenylamine, 1109. Dimethyltriamidodiphenyltolylmethane, 189. Dimethyltrihydroxybenzophenone, 1225.Dimethyltrimethylenedisulphone sulphide, 593. Dimethyltrimethylenetrisulphone, 591, Dimethylumbelliferonecarboxylic acid, αβ-, 432. Dimethylxanthone, 1093. Dinaphthenylimidine, β -, 1110. Dinaphtho-xanthone, 1099. Dinaphthylamidinecarbamide, 1008. Di-β-naphthylcarbamic chloride, thio-, Dinaphthylcarbamide, tetranitro ·a·, 467. - tetranitro-β-, 467. Di-β-naphthylcarbamide, unsymmetrical, thio-, 165. Dinaphthyl- $\alpha\gamma$ -diketopiperazine, β -, 1342.Dinaphthyl- $\alpha\gamma$ -dimethyl- $\beta\delta$ -diketopiperazine, β-, 1337. Di-a-naphthylformamidine, 706. Dinaphthylmethylcyanidine, 1110. Di-β-naphthylphenylcarbamide, Dinaphthylthiocarbazide, \(\mathcal{\rho}\)-, 513. Dinaphthylthiocarbazone, β -, 513. Dinitrosacyls, 971. Dioxydehydronicotine, dibromo-, 1497. Dioxymethylenephenyloximidoacetic acid, 327. Dioxythiophenetoïl, 1316. Dipentene, dihydrochloro-, action of chlorine on, 1350. Dipentenenitrolanilide, α -nitroso-, 1348. Dipentenenitrolbenzylamine, chloro-, 1349. dimetanitrodiorthamido-, Diphenyl, $\tilde{4}81.$ Diphenylacetonitrile, 344, 1094. Diphenylamine, action of silicon tetrachloride on, TRANS., 454. diamido-, 1109. - formation of, from orthobromobenzoic acid, 1188. Diphenylamineorthoparadisulphonic

acid, 333.

979.

– dihydride, 720.

Diphenylanthracene dibromide, 720.

Diphenylcarbamide, bromo-, 833.
—— metachloro- and parachloro-,

- unsymmetrical thio-, 164.

Diphenylcrotolactone, 1002. Diphenylcyanamide, Proc., 1892, 96. 1612 Diphenyl-derivatives, dehydration of amides in contact with, 617. Diphenyldiamidodicarboxylic 1464. Diphenyldi-β-naphthylcarbamide, symmetrical, 166. — thio-, 165. — unsymmetrical, 167. Diphenylene oxide, synthesis of, 1470. Diphenyleneazone, 184, 482. - diamido-, 184. - dioxide, 183. – oxide, 183. Diphenylenediamine, para-, 481. Diphenylenehydrazone, 184. Diphenylformamidine, metadinitro-, - metanitro-, 707. Diphenylfurfurylguanidine, 43. Diphenylhydantoin, 1334. Diphenylhydrazoneopianic acid, 1210. Diphenylmaleïc acid, action of soda on, -– anlıydride, 178. Diphenylmethane, paradiamido-, 618. nitro-derivatives of, 618. Diphenylmethyleneaniline, 1195. Diphenylmethylethophenazonium hydroxide, 1108. Diphenylnitrosamine, orthonitro-, 332. Diphenylorthamide, preparation 1198.Diphenylpropionic acid, 849. preparation of, 1228. Diphenylpyrrolidone, 1003. Diphenylpyrrolone, 1003. Diphenylquinol, nitro derivatives **310.** Diphenylresorcinol, tetra-, penta-, and hexa-nitro-, 310. Diphenylsuccinonitriles, α - and β -, 619, 620.- stereoisomeric, 619. Diphenyltetraketone, 69. Diphenylthiazolecarboxylthiamide, 638. Diphenylthiocarbamide, 600. Diphenylthiohydantoin, 468. Diphenylthiourea, unsymmetrical, Proc., 1892, 96. Diphthalimidoethyl sulphide, 130. sulphoxide, 130. Diphthalimidoethylsulphone, 131. Diphtheria, chemical pathology of, 744. Dipiperazine, paradinitro-, 210. Dipiperidyl, 2:3-, 1365. Dipotassium imidosulphonate, TRANS., Dipropargyl and benzene, 1436. - constitution of, 1437.

— molecular refraction of, 1437.

unsymmetrical,

Dipropylcarbamide,

1421.

Dipropylpimelic acid, ωω'-, dissociation constant of, TRANS., 701. Dipropyltrimethylenetrisulphone, 592. Dipseudocumylcarbamide, 832. Dipyridyl carbonyl bromoplatinosite, 353. - chloroplatinosite, 352. Dipyridyl-aa-dicarboxylic acid, 75. Disanhydrotetrabenzamidotetrahydroxyoctene, 1002. Disazobenzene, chloronitro- and chloronitronitroso-derivatives of, 456. nitronitroso-derivatives of, 455. Disazobenzenephenylhydrazine, pentanitro-, 456. Disbenzeneazoacetine, 161. Diseases, diamines in, 518. - infectious, ptomaines of, 1258. Disodium imidosulphonate, TRANS., 954. Dispersion and refraction of sodium chlorate, 1. Dissociation constants of organic acids, Trans., 696. of stereoisomeric nitrogen compounds, 1268. - electrolytic, and absorbent power of coloured salts, 757. - and osmotic pressure, theories of, 1143. of salts, determination of, by means of solubility experiments, 1143. - hypothesis and strong solutions, 108. - in dilute solutions of tartrates, 588, 1144. of bismuth chloride by water, effect of sodium chloride on the, 122. - of electrolytes, correction in the calculation of the heat of, 931. of liquid nitrogen peroxide, TRANS., 242. - of phosphonium bromide, 401. Dissolution, abnormal, 1047. - behaviour of molecular compounds on, 1154. change of volume on, 264. Dissymmetry, molecular, 399. Disuccinimidodihydroxamic acid, 138. Disulphanilic acid, 333. Disulphones, formation of trisulphones from, 613, 850. Ditetramethylene diphenyl glycol, Trans., 66. Dithiocarbamates, aromatic, 55. Dithiocarbonic acids, 306. Ditolenylimidine, 1110. Ditoluamide, para- and ortho-, 712. Ditolyl ketone, diamido-, 1460.

– dinitro-, 1460.

- meta-, 851, 852.

Ditolyl dicyanide, meta-, 852. Ditolylamine, orthamido-, derivatives of, orthamido, formation of an, from parahydrazotoluene, 853. Ditolylbenzylcarbamide, para-, 1083. Ditolylcarbamic chloride, para-, 1083. Ditolylcarbamide, meta-, 832. Ditolylcarbazide, para-, 512. Ditolylcyanocarbamide, diargentocyanide, para-, 1084. Ditolyldicarboxylic acid, 852. Ditolyl- $\alpha\gamma$ -diethyl- $\beta\delta$ -diketopiperazines, para-, 1338. Ditolyl-αγ-diketopiperazine, 1334.para-, 1337. Ditolyl-αδ-diketopiperazine, para-, 1336. Ditolyldisulphonic acid, 1466. – amido-, 1467.

Ditolylhydantoin, ortho-, 1334. ---- para-, 1336. Ditolylhydroxycyanidine, 1008. Ditolylmethylcyanidine, 1110. Ditolylsemithiocarbazide, ortho-, Trans., 1017. para-, Trans., 1018. Ditolylthiocarbazide, ortho-, 513. para-, 512. Ditolylthiocarbazone, ortho-, 513. - para-, 512. Divalolactone, 814. Dixanthone, 1097. Dixylylcarbamide, 832. Dogs, digestion of starch by, 516. Dopplerite, 689. Double salts, solubility of, 1145. Dulcitol, a pure fermentation of, Trans., 254.

and calcium chloride, compound of, Trans., 275. - and its derivatives, optical proper-

ties of, 1419. thermochemistry of, 764.

Duodecylacetylene, 1164.

Durene, chloro-, action of sulphuric acid on, 968.

- iodo-, 967.

mono- and di-chloro-, 967. Durenesulphonic acid, chloro-, 1465. Dyeing with aniline black in the dry way, 323.

Dyes of the triphenylmethane group,

Dypnopinacolene, 994. Dypnopinacolin, α-, 993. - ulcohol, 994. Dypnopinacolin, ß-, 994. Dypnopinacone, 993.

Ε.

Earth-nut cake and meal, approximate estimation of adulteration of, 1535. - meal, 92.

Earths of the cerium and yttrium 1400.

Ecgonine, constitution of, 360.

Effusion of gases, lecture experiment

on, 1150. Egg yolk, estimation of fat in, 1134.

Eggs, crustacean, digestive ferment in,

Elaïdic and oleïc acids, stereoisomerism of, 812.

Ellagic acid, 990.

Elaterite, 689.

Electrical behaviour of metals in salt solutions, 393.

- conductivities, study of the chemical constitution of neutralisation of acids and bases by means of their, 2.

- conductivity of a solution, alteration of, by addition of a non-electrolyte, 1382.

of lead dioxide, 672.
of organic acids, Trans., 696. - of solutions of organic acids, influence of boric acid on, 256, 1265.

 of substances in mixed solvents, 1038.

 resistances, new method of measuring, 105.

volatility of the metals, 1037.

Electrocapillary phenomena, 553, 760. reactions, 393, 394.

Electrochemical equivalent of copper,

Electrodes, small, galvanic polarisation at, 759.

Electrolysis, 257.

and diffusion, theory of, 935.

laws of, 1037.

-- of potassium acetate solutions, TRANS., 10.

Electrolytes, changes of E.M.F. volume and temperature on mixing, 930

correction in the calculation of the heat of dissociation of, 931.

- separation of precipitates at the boundary of, 1038.

thermoelectric phenomena at the contact of two, 1037.

Electrolytic conductivity and dielectric power, coexistence of, 759.

— of polybasic acids, 1145.

- dissociation and absorbent power of coloured salts, 757.

- and esmotic pressure, theories of, 1143.

- of salts, determination of, by

means of solubility experiments, 1143.

Electrolytic gas, ignition temperature of, 680.

preparation of metallic alloys, 394.
 separation of metals, new principle of, 1521.

Electromotive activity of the ions, 671.

force of gas batteries, 393.

- relation of latent heat, specific gravity. &c., to, 257.

volume, and temperature, changes of, on mixing electrolytes, 930.
 forces, new method of measuring, 105.

--- of metallic salts, 255.

Flectrostenolysis, 393.

Element, new, in an Egyptian mineral, Trans., 491.

Elements, place of fluorine in the classification of, 11.

- tabular expression of the periodic relation of, 562.

Endocarditis, infective, chemical pathology of, 744.

Energetics, studies on, 1149.

Energy as the unit of an absolute system of measurement, 1149.

Enzyme, cellulose dissolving, search for, in the digestive tract of certain animals, TRANS., 352.

Ephedra monostachia, ephedrine from, 893.

Ephedrine from Ephedra monostachia, 893.

Fnichloramine, 29.

Epidibromhydrin, 420.

Equilibrium, chemical, in solutions, 1146.

- labile conditions of, in mixtures of two substances at a temperature below the melting point of either, 936.

of chemical systems under unequal pressures, 937, 1148.
 of double salts of lead and potas-

sium iodides with their aqueous solu-

tions, 560. Erucic acid and brassidic acid, stereometric relations of, 429, 812, 1427.

---- bromo- and chloro-, 429.

—— —— dichloride, 429. —— phenylhydrazide, 1428.

Errum hirsutum and E. Lens, composition of, 522.

Erythraa centaurium, constituents of, 1261.

Erythritol, thermochemistry of, 764. Erythrocentaurin, 1262.

Essence of sandal wood, adulteration of, 1379.

Essences, detection of turpentine and other impurities in, 386.

Ethane, absorption-coefficient of, in water, 1044.

— action of heat on, Trans.. 329. Ethanetetracarboxylicacid, symmetrical, 824

Ethenyldiamidonaphthyl ethyl ether, 1098.

Ethenyldiamidotoluene and its derivatives, 837.

Ethenyldinitrotoluyleneamidine, 1197. Ethenylnitrotoluyleneamidine, 1197.

Ethenvlorthohomoparahydroxybenz-

envlazoxime, 321. Ethenylparahomosalicenylazoximes, 319.

Fthenylpiperonylazoxime. 318. Ethenyl-\(\beta\)-trichloro-\(\alpha\)-hydroxypropenyl-

nzoxime. 321.
Ether, influence of, on the velocity of the hydrolytic action of yeast, Trans.,

Ethereal oils, oxygen compounds of, 868.

Fthereal oils. See Oils.

Ethercal salts, action of sodium on, Proc., 1891, 167.

——— condensation of cyanides with, 431.

—— in spirits, estimation of, 387. Fthoxalylacetylfurfuramidine, 1007.

Ethoxalylacetylfurfuramidine, 1007. Ethoxalylacetyltolenylamidine, 1008.

Ethoxyacetamidoquinoline [1:4], 1104. Fthoxyacetophenone, ortho-, 989.

Ethoxyamidoquinoline [1:4], 1105.

Ethoxyantipyrine, para-, 1080.
—— salicylate, 1082.

Ethoxyazobenzene. para-, preparation and nature of, 839.

- reduction of, 839.

Ethoxybenzaldoxime, ortho-, 58. Ethoxybenzonitrile, ortho-, 58.

Ethoxybenzylamine, ortho-, 58.

Ethoxy-a-bromocinnamene, ortho-, 989.

Ethoxybutyric acid. 7-, 813.

Ethoxycinnoline, 1494.

Ethoxycresol, 447.

Ethoxydiacetylorthophenylenediamine, meta-. 161.

Ethoxydihydroxyquinoxaline, meta-, 160.

--- para-, 734.

Ethoxydiphenylquinoxaline. para-, 732. Ethoxydiphenylsulphoncorthophenyl-enediamine, meta-, 161.

Ethoxyhydroxydinitrodiphenylamine, 314.

Ethoxyhydroxymethylauinoxaline, 733. Ethoxyimidofurfuran, 831.

Ethoxyisosuccinic acid. 1305.

Ethoxymetaxylenesulphonic acid, Proc., 1891, 190.

Ethoxymethylindole, 955. Ethoxynaphthazine, 733. 817. Ethoxyorthophenylenediamine, meta-. Ethoxyphenanthrazine, para-, 733. 812, 839. Ethoxyphenyl sulphide, 1316. Ethoxyphenylacetylene, 989. Ethoxyphenylchloracrylic acid, ortho-, 820, 853. Ethoxyphenylhydrazine, para, and its salts, 1080, 1081. Ethoxyphenylhydrazinesulphonic acid, para-, 1082. acid on, 1074. salts of, 1081. Ethoxyphenylmethylpyrazolone, para-, 108Ő. Ethoxyphenylnaphthostilbazonium chloride, action of ammonia on, 1247. 1070. - - action of heat on, 1247. --- hydroxide, 863. ate, 143 Ethoxyphenylorthodiamidonaphthalene, 863. Ethoxyphenylpropiolic acid, ortho-, Ethoxyphenylsulphonic acids, meta-, formation of, 1139. ortho-, and para-, and their derivatives, 1089. Ethoxypiazthiole, para-, 734. 1101 Ethoxypropanilide, a-, 1337. Ethoxypyridine, α-, 109. tion of, Trans., 809. Ethoxyquinoline, derivatives of, 1105. Trans., 792. Ethoxyquinoxaline, para-, 732. Ethoxyquinoxalinedicarboxylic acid, para-, 733. Ethoxytetramethylenecarboxylic acid. TRANS., 46. Ethoxytrimethylammonium platinochloride, chlor-, 807. 697. Ethyl acetates, substituted, hydrolysis of, 1148. acetoacetate, 140, 953. - acetyl and benzoyl, derivatives of, 817. cyanic acid on, 1196. - action of, on dicyanophenylhydrazine, 597. - action of phenylhydrazine on, - action of propylene bromide 1218. on the sodium derivative of, Trans., nitrite, 1217. 67. — aldehydeuramides, 56. - constitution cf, 583, 816, - haloïd, derivatives of, 697. 1344. - - introduction of acid radicles benzenesulphonate, 1220. into, 696. --- benzenesulphoneorthamidobenzo-- --- magnetic rotation of, TRANS., ate, 334. 808, 838. - benzoparadifurfuran-a-dimethyl-· stereoisomeric dioximes from, B dicarboxylate, 610. 1175. - benzoylacetate, action of propylene

— β-acetoisobutyrate, 74.

1615 Ethyl β -acetoxy- $\alpha\beta$ -dibromopropionate, ---- acetonedicarboxylate, 431. - magnetic rotation of, TRANS., — acetoneoxalate, refractive and dispersive powers of, Trans., 854. - magnetic rotation of, TRANS., acetophenoneoxalate, magnetic rotation of, Trans., 833, 864. - acetosuccinate action of nitrous — acetothienoneoxalate, 154. —— derivatives of, 303. —— β-acetoxymethylacrylate, 817. --- acetylcarbintricarboxylate, 145, — α-acetyl-β'-hydroxyhydromucon- acetylmethyltrimethylenecarboxylate $\lceil 1:2:1 \rceil$, Trans., 67. — acetyltartronate, 39.
— alcohol, heats of combustion and — vapour tension of, 397. — allomethyl camphorate, ortho-, - allylacetoacetate, magnetic rota- amidoethylenedicarboxylate, — β-amidocrotonate, magnetic rotation of, Trans., 828, 859. - refractive and dispersive powers of, Trans., 861. - amidomethylthiazolecarboxylate, —— 2:5 amidonitrobenzoate, 326. —— amidothiazylisobutyrate, 697. ---- amidotolylexamate, 1208. --- anilacetoacetate, action of hydroβ-anilidoacrylate, 818.
2: 5-anilidonitrobenzoate, 326. —— anilidophenylsuccinamate, 820. anilidotrinitrophenylmalonate, anilidotrinitrophenyltartronate, ---- azimethylenedicarboxylate, 453. - benzeneazocamphocarboxylate,

bromide on the sodium compound of

TRANS., 82.

- Ethyl benzoylacetate, magnetic rotation of, Trans., 831, 861.
- --- benzoylmethyltrimethylenecarboxylate, Trans., 84.
- ---- a-benzylacetoglutarate, 962.
- benzyldicarboxyglutaconate, action of phenylhydrazine on, Trans., 795.
 - ---- bromacetoacetate, 143, 818.
- 1414.
- bromobenzenesulphonate (para), 1220.
- α-bromocinnamates, action of phenylhydrazine on, TRANS., 279.
- bromodinitrophenylmalonate nitrite, 1219.
- bromomalonate, action of potassium acetate on, 39.
- --- α-bromomethylacetoacetate, 144.
- bromopropyl ether, 420.
- bromosuccinate, action of α and β -naphthylamines on, 860.
- --- bromotrinitrophenylmalonate, action of nitric acid on, 1217.
- --- --- nitrite, 1217.
- --- bromotrinitrophenyltartronate, 1218.
- ---- butyl ether, 28.
- --- camphocarboxylate, 348.
- on, 74.
- --- camphorate, 501.
- carbacetoacetate, so-called, 819.
- carbethoxyethylacetoacetate, 1179.carboxyethylacetoacetate, 1070.
- ---- a-carboxyethylpimelate, 427.

- chlorobenzenesulphonate (para-), 1220.
- --- chlorobromomalonate, 39.
- --- chlorocarbonate, 963.
- —— cinnamate, refractive power of, at different temperatures, TRANS., 304.
- citraconate, action of ethyl sodiomalonate on, 590.
- cyanacetate, action of hydroxylamine on, 139.
- action of, on aniline, 1072.
- _____action of, on organic bases,
- ation of, 1086.
- γ-cyanacetoacetate, 819.

- Ethyl cyanide, action of sodium on, 576.
- --- α-cyanisopropyl ketoxime, 80.
- --- cyanocinnamamate, 1087.
- a-cyanocinnamate, 1086.
- a-cyanopropionate, additive compound of hydrogen cyanide with, 1301.
- --- cyanopyruvate oxime, 431.
- ---- cyanotricarballylate, 1181.
- dehydrocholate, 741.
- diacetoacetate, magnetic rotation of, Thans., 823, 854.
- powers of, Trans., 857.
 diacetosuccinate, action of nitrous
- acid on, 1074.
- diallylacetonedicarboxylate, 434.
 dibenzoylacetoacetate, 145.
- dibenzylacetoacetate, 963.
- dibenzylcarbamate, 1084.
- dibromosuccinate, action of zinc on, 40.
- dicarboxyglutaconate, action of ammonia on, Trans., 791.
- Trans., 793.
- dichloroketohydroxyhydrindenecarboxylete, 858.
- dichloromalonate, 39.
- —— dichloroquinoldiacetoacetate (para-), 609.
- dichloroquinonediacetoacetate (para-), 609.
- 610. additive products of,
- diethoxyacetoacetate, 955.
- dihydroxytartrate, 1181.
- αβ-diisonitrosobutyrate, 1175.
 dimethyldicyanoadipate, 430.
- --- dimethyldicyanopimelate, 430.
- dimethylsuccinosuccinate, 1182.
 -----αβ-dimethylumbelliferonecarboxyl--
- ate, 432.

 dinitrophenylacetate, derivatives
- of, 178.
- --- dioxosuccinate, 1181.
- diphenoxymalonate, 40.
- --- ditannacetoacetate, 181.
- --- ditolylcarbamate (para-), 1084.
- ethoxyacetoacetate, 954.
- ---- ethoxychloracetoacetate, 953.
- ethoxyoxalacetate phenylhydrazone, 458.
- ethylacetoacetate, magnetic rotation of, Trans., 809, 837.
- a-ethylacetoglutarate, 962.
- --- ethylideneacetoneetate, magnetic rotation of, Trans., 810, 837.

Ethyl ethylimidoethylphenylthiocarbamate, 466. ethylurethanophenylacetate, 469. formylacetate, acetyl and benzoyl derivatives of, 817. — constitution of, 816. ---- fulminurate, 690. ----- isomeric, 1417. --- fumarate, action of ethyl sodiomalonate on, 590. —— β-furfuramidocrotonate, 57. ---- hexyl ketone, 35. hippurate, compound obtained by the action of sodium ethoxide on, – hydrazopropionate, 452. - hydrogen adipate, dissociation constant of, Trans., 712. - — camphorate, allo-, 1102.
- — dimethylmalonate, dissociation constant of, Trans., 712. - - ethylmalonate, dissociation constant of, Trans., 712. - - fumarate, dissociation constant of, TRANS., 714. isosuccinate, dissociation constant of, Trans., 712. - - maleate, dissociation constant of, TRANS., 714. - malonate, dissociation constant of, TRANS., 711. - - phthalate, dissociation constant of, TRANS., 714. - - sebate, dissociation constant of, TRANS., 713. - suberate, dissociation constant of, Trans., 713. - - succinate, dissociation constant of, Trans., 711. --- β-hydroxyacrylate, 816. hydroxybenzofurfuran-αmethyl-\(\beta\)-carboxylate (para-), 611. $-\beta$ -hydroxycrotonate, acetyl and benzoyl derivatives of, 817. hydroxytoluquinoxalineacetate, 709. imidoethylphenylthiocarbamate, 466. —— imidophenylthiocarbamate, 466. — imidosuccinamate, 820. iodide, preparation of, Trans., 717. - isobutyl ketone, 36. oxidation of, 36. —— isocamphorate, 501. --- isopropyl ketone, 36. ---- itachloropyrotartrate, action ethyl sodiomalonate on, 591. - itaconate, action of ethyl sodiomalonate on, 591. — ketacetate, 955. licaryl ether, 1236.

VOL. LXII.

- maleate, action of ethyl sodiomalonate on, 590. malonate nitrosophenylhydrazide, 1004. – phenylhydrazide, 1004. --- mandelate, 1089. - mesaconate, action of ethyl sodiomalonate on, 591. --- mesoxalate, 40. - methoxybenzoylacetate (ortho-), - methyl ketone, chloro-, action of sodium on, 810. -- reactions of, 810. - β-methylacetosuccinate, action of nitrous acid on, 1074. methylamphiglyoximecarboxylate, 1176. — methylcamphocarboxylate, 201. -1:2-methylcarboxyethylpyrrolineacetate, 144. · methyl-a-cyanotricarballylate, 1182. --- methyldiacetyladipate, Trans., 73. - decomposition of, by heat, TRANS., 75. methylsynglyoximecarboxylate, — morphine carbonate, 638. — β-naphthalenesulphonate, 1220. ---- β-naphthyl-β-amidoisobut yrate, — a-naphthylamidosuccinate, 860. — β-naphthylamidosuccinate, 860. - a-naphthylazoacetoacetate, 367. --- α-naphthylidoacetate, 1341. — β-naphthylidoacetate, 1342. — α-naphthylidobutyrate, 1338. ---- β-naphthylidobutyrate, 1338. --- α-naphthylidopropionate, 1337. —— β-naphthylidopropionate, 1337. nicotenylamidoximecarbonate, 208. - nitrate, action of alkaline solutions on, 692. - mitrosomethylisostrychnate, 1013. - oxalacetate, compound of, with phenylhydrazine, 49. - ---- reduction of, 147. - oxalate, action of phosphoric chloride on, 588. - - diphenylhydrazide, 981. - a-naphthylhydrazide, 511. — β-naphthylhydrazide, 509. --- paratolylhydrazide, 512. ---- oximidoacetate, 700. — pentaneoctocarboxylate, 1316. ---- phenylacetate, amido-, 214. - phenylamidoacetate, 468. — nitrite, 469. phenyl-β-azocrotonate, 143. $\mathbf{5} q$

Ethyl malate, inactive, 1431.

111222	50202015
Ethyl phonylliggalanagayhayylata 513	Ethyl twishlows an in ale set as set at a COO
Ethyl phenylbiazolonecarboxylate, 513.	Ethyl trichloroquinolacetoacetate, 608.
— phenylcarbamate, nitration of, 712.	trichloroquinoneacetoacetate, 608.
—— phenylhippurate, 468.	trinitrophenylenedimalonate
—— phenylhydrazidopropionate, 1456.	nitrite, 1219.
phenylhydrazilethylenedicarboxyl-	trithioacetate, 154.
ate, Trans., 794.	Ethyl-γ-acetobutyric acid, γ-, 962.
— phenylhydrazine-β-carboxylate,	Ethylacetovanillone, 61.
145.	Ethylacetovanillonoxime, 61.
— phenyl-β-hydrazocrotonate, 142.	Ethylacetylacetone, magnetic rotation
— phenylhydrazoneketophenylpyr-	of, Trans., 813, 851.
azolonecarboxylate. 458.	Ethylacetylene, a-hydrobromide, 127.
phenylmethylpyrazolonecarboxyl-	Ethylacridine, 342.
ate, 798.	Ethylaldoxime, action of azotoluene on,
— phenyl-β-naphthylcarbamate, 166.	1079.
phenylpyrazolonecarboxylate,	- action of diazobenzene on, 1079.
Trans., 794, 798.	Ethylamidometanitrobenzophenone,
— phenyltartronate, 40.	para-, 336.
phenylthiouranilidacetate, 468.	Ethylamidophenylnaplithylamine,
phenyluramidoacetate, 468.	action of benzaldehyde on, 1472.
— phenyluranilidacetate, 468.	Ethylamine hydrogen diaminechromium
piperazyloxamate, 211.	thiocyanate, 1000.
— propanetetracarboxylate, 41.	— platinothiocyanate, 286.
propyl ether, 28.	— thio-, salts of, 130.
- ketone, oxidation of, 35.	- thio-derivatives of, 130.
quinoneoximecarboxylate, 1457.	Ethylanilbiguanidine, 357.
- santonate, amine of, 1353.	Ethylaniline, action of silicon tetrachlor-
	ide on, Trans., 455.
——————————————————————————————————————	
and an et an estate 1499	Ethylantibenzhydroximic acid, 463,
sodacetoacetate, 1428.	464.
- action of ethereal salts of	Ethylbenzanilide, para-, 488.
unsaturated acids on, 590.	Ethylbenzene, action of aluminium
action of ethyl chlorocarbon-	chloride on, 1309.
ate on, 1070, 1178.	Ethylbenzenylamidine, 53.
constitution of, 140, 1178.	Ethylbenzhydroximic acids, 462.
	Ethylbenzophenone oxime, antipara-,
chloride on, 1179.	488.
sodiocyanacetate, action of ethyl	——— synpara-, 488.
salts of unsaturated acids on, 1181.	Ethylbenzoylcarboxylic acid, orthodi-
—— sodiocyanotricarballylate, 1181.	chloronitro-, 1229, 1232.
—— sodiomalonate, action of ethereal	lactone of, 1230.
salts of unsaturated acids on, 590.	Ethylbergaptic acid, 72.
—— sodium acetothiosulphate, 1419.	Ethyl-δ-caprolactone, γ-, 962.
succinate phenylhydrazine, 1495.	Ethylchitenidine, 1250.
—— succinic chloride, 1495.	Ethylcinnamylamide, \$\beta\$-brom-, 215.
—— tannacetoacetate, 181.	Ethylcoumarin, α-, derivatives of, 330.
tetrachloro-α-hydroxyhydrindene-	Ethylcoumarinic dibromide, 989.
carboxylate, 858.	Ethylcrotonic acid, oxidation of, 958.
— tetrahydroxysuccinate, 1181.	Ethyleysteïn, 1111.
toluenesulphonate (para-), 1220.	Ethyldimethylamidobenzene $(6:1:4:3)$,
toluidoacetate (ortho-), 1334.	TRANS., 420.
(para-), 1335.	Ethyldithiobiuret, a-, 704.
— toluidoacrylate (β-para-), 818.	Ethylene, absorption coefficient of, in
— toluidobutyrate (α-ortho-), 1338.	water and in alcohol, 1044.
———— (a-para-), 1338.	- action of heat on, Trans., 329.
—————————————————————————————————————	- explosion of, with less than its
— toluidopropionate (α-ortho-), 1337.	own volume of oxygen, Trans.,
(α-para-), 1337.	873.
	flame, experiments on, Trans., 210.
triacetylacetate, 145.	glycol, thermochemistry of, 764.
trichloroparahydroxybenzofurfur-	—— giveor, thermochemistry or, 764. —— nitrate, action of alkaline solutions
	on, 692.
an- α -methyl- β -carboxylate, 609.	Cing Obay

Ethylene paratoluenethiosulphonate, sodium thiosulphonate, 1418. Ethylenebenzenyldiamine, 1248. Ethylene-derivatives of diazoamidocompounds, Proc., 1892, 119. Ethylenediamine, action of dithio-oxamide on, 1247 action of, on thiamides, 1247. platinothiocyanate, 287. Ethylenephenylhydrazone, thionyl-, 1324. Ethyleuxanthones, 1355. Ethylfurfurylcarbamide, 43. Ethylfurfurylthiocarbamide, 43. Ethylhydroberberine, derivatives of, Ethvl-δ-hydroxycaproic acid, salts of, Ethylhydroxypyrimidinecarboxylic acid, Ethylidene bromide, bromination of, Ethylideneacetophenone, trichlor-, 695. Ethylidenecinchonic acid, 1490. Ethylidenecinchoxinic acid, 1490. Ethylidenedicyanophenylhydrazine, Ethylidenediphenylhydrazone, 1196. Ethylisobutylthiocarbamide, symmetri-Ethvlisoformanilide, 708. Ethylisosuccinimide, 701. Ethylmalonic acid. bromo-, 40. Ethylmercaptophthalimide, action of various reagents on, 130. Ethylmetanitrobenzamide, \(\beta\)-brom-, 213. Ethylmetanitrobenzenylamidine, 52. Ethylmetaxylene, symmetrical, and its derivatives, 969. unsymmetrical, and its derivatives. 968. Ethylmethylamine, 64. Ethylmethylketoxime, action of hydrocyanic acid on, 1196. Ethylmethylmaleïc acid, 814. Ethylmethylquinoline, 1107. Ethyl-β-naphthindolesulphonic acid, sodium salt of, 1458. Ethyl- β -naphthoxindole, 1458. Ethylorthotoluidine, paramido-, 1078. Ethylparisopropyltoluene, ortho-, 985. Ethylphenol, ortho-, 1318. Ethylphenylacetamide, β -brom-, 214. Ethylphenylhydrazine acetoacetate, action of hydrocyanic acid on, 1196.

Ethylpseudocumene and its derivatives,

Ethylpyridine, β -, properties and deriva-

tives of, 629.

Ethyl-a-pyridone, 209. Ethylpyrroline, a-, 351.

Ethylpyrroline, β -, 352. Ethylpyrrolines, constitution of, 350. Ethylquinidine, 1250. Ethylquinolone, bromo- and nitro-de-rivatives of, 879, 880. Ethylresorcinol ethyl ether, nitroso-, 45. Ethylsulphone, diamido-, 131. Ethylsulphonediphthalamic acid, 131. Ethylsynbenzhydroximic acid, 463, 464. Ethylthiobiuret, α-, 703 Ethylthiocoumarin, α-, 330. Ethylthiophen, β -, 829. Ethylthiophenhydroximic acid, 831. Ethylthiourea, action of nitrous acid on, Trans., 525. Ethyltricarballylic acids, a-, 42. Ethyltrihydroxybenzene, dinitro-, 315. Ethylytrimethylammonium dibromo-, salts of, 806. - tribromo-, salts of, 807. - — β-iodo-, salts of, 808. Ethyltrimethylbenzenesulphonic acids, Ethyltrimethylenedisulphonesulphide, Ethyltrimethylenetrisulphone, 591, 593. Ethylurethanophenylacetic acid, 469. Ethylvinylpyridine, 1358. Ethylxylenes, amido-, 9+9. Ethylxylenesulphonic acids, 969. Eucalyptus oil, terpin hydrate from, 1235.Eupatorin, 1103. Eupatorium perfoliatum, active principle of, 1103. Eurĥodoles, 859. Euxanthic acid, 1354. - action of hydroxylamine on, 1355. Euxanthone, 1354. constitution of, 504. Evaporation and condensation, spheres of, 956, 1149. latent heat of, relation of specific inductive capacity to, 258. · under reduced pressure, apparatus for, 1386. Excretion, nitrogenous, influence of water and sodium chloride on, 904 of nitrogen and uric acid from the human system, influence of hot baths on, 1503. of nitrogen in kidney disease, 743, of nitrogen in urine, 1503. Expansion of water, 7, 106, 1382. thermal, of liquid bismuth, 259. Explosion of ammonium nitrate, 683.

Extract, nitrogen free, constituents of,

Explosives, 1141.

F.

Fat, estimation of, in yolk of eggs, 1134. estimation of, in milk, 549, 550, 1134, 1532.

- estimation of, in the products from milk, 391.

- extraction of, from milk solids,

horse, 1533.

Fat-decomposing ferments in plants,

Fat-oils, absorption and digestion of, by plants, 1118.

Fats and oils, revision of constants employed in the analysis of, 547.

- estimation of unsaponifiable matters in, 1533.

- foreign, detection of, in butter,

Fauserite from Hodrusbánya, 1054. Fencholenamine, 1240.

Fencholenic acid and its derivatives, 1237.

reduction of, 1237.

Fenchone and camphor series, 1236. Fenchonitrile and its derivatives, 1236.

Fenchylamine fenchylcarbamate, 1239. ---- salts, 1239.

Fenchylcarbamide, 1239.

Fenchylphenylthiocarbamide, 1239.

Ferment, aërobic nitrate-reducing, in straw, 1259.

fibrin, 1112.

- saccharific, localisation of, 517.

Fermentation, 820.

 alcoholic, influence of oxygen and concentration on, Trans., 369.

- - influence of the hydrolytic action of yeast on its power of, Trans., 940.

- conditions affecting the action of fluorides on, 906.

- of arabinose with the Bacillus ethaceticus, TRANS., 737.
— of blood, 900.

—— of farmyard manure, 1123.

- of mannitol and dextrose with Bacillus ethaceticus, Trans., 432. of mannitol and dulcitol, a pure,

TRANS., 254. Ferments, digestive, in crustacean eggs,

— fat-decomposing, in plants, 1261.

—— in pineapple juice, 650. —— unorganised, 899.

Fern extract, ethereal, poisonous constituent of, 380.

Ferric chloride, action of barium peroxide on, 408.

- — action of, on metallic sulphides, 18, 278.

Ferric hydroxide, colloïdal solutions of, Trans., 152, 162.

oxychlorides, crystallised, 119.

- phosphate, dissociation of, in presence of water and of saline solutions, 1292.

- sulphate, anhydrous, crystallised, 943.

Ferrous solutions, action of iron on, 276. Ferrum reductum, estimation of metallic iron in, 1524.

Fibre, vegetable, detection of, in silk or woollen tissue, 667.

- — woody, the pentosans of, 1420.

Fibres, specific gravity of, 1036.

Fibrin, decomposition of, in the human

body, 904. - solubility of, 897.

Fibrin-ferment, 1112.

Fibrin-peptone, 1500.

Ficus carica, the latex of, 653.

— rubiginosa and F. macrophylla, resins of, TRANS., 916.

Filicic acid, 380.

Filicin, 380.

Filtration, hot, apparatus for, 1150.

use of asbestos in, 751.

Fir-wood, dextrose from, 801.

- so-called artificial pectic acid from,

Flame, coal-gas, flat, temperature of various parts of, Trans., 326.

— structure of, Trans., 331.

Flame-coloration, origin of, Proc., 1892, Flames, coal-gas, carbon deposited from,

Proc., 1892, 46. - luminosity of, TRANS.,

322. luminous, structure of, Trans.,

217.non-luminous, experiments on,

Trans., 205. optical proof of the existence of suspended matter in, 111.

origin of acetylene in, Proc., 1892, 47.

 structure and chemistry of, TRANS., 204.

the interactions occurring in, Proc., 1892, 22.

Flashing points of heavy mineral oils, determination of, 542.

Flavin, preparation of, 503.

Fluoran, 970.

constitution of, 1228.

--- tribromo-, 970.

Fluorescein, constitution of, 1228.

Fluoresceïn-group, 1228.

Fluorescence, appearance of, in quinine salts, Trans., 789.

Fluorescin, 970, 1319. – ethyl ether, 1319. Fluorides, action of boron on, 1153. estimation of silicic acid in, 1127, 1128. influence of, on fermentation, 906. Fluorine, estimation of, 911. --- in natural phosphates, 1055. - in recent and fossil bones, 1161. - place of, in the classification of the elements, 11. - proportion of, in fossil bones of various ages, 1413. Fluoroform, 1316. Fluoroline, 1492. Fluorosulphonic acid, Trans., 921. Fluorovanadites, 785. Fluoroxyhypovanadates, 785. Fluoroxyvanadates, 785. Fætal organism, iron in the, 1502. Fœtus, intake of the iron by the, 516. Food, constituents, calorific value of, 4. - value of brushwood, 1511. - - of the cotton plant, 1510. Footeite, 415. Formaldehyde, 423, 1423. action of, on orthodiamines, 1496. ---- condensation products with, 1450. - nutrition of green plant cells with, 1259. - reactions of, 579. - thio-, reactions of, 579. Formamidine picrate, 705. Formanilide, action of trimethylene chlorobromide on, 1491. - metanitro-, 706. Formates, metallic, 140. - trithiortho-, 611, 850. Formic acid, heats of combustion and formation of, 1139. - thio-, 421. Formoguanamine, formation of, 736. Formohydroxamic acid, 699. Formotoluidides, action of trimethylene chlorobromide on, 1491. Formyl compounds, aromatic, derivatives of, 707. Formyldiorthotolylhydrazine, 843. Formyldiparatolylhydrazine, 843. Formyldiphenylhydrazine, 843. Formylorthotolylhydrazine, 843. Fouqueite, 1056. Frangulin, TRANS., 1. - composition of, Trans., 3. - hydrolysis of, Trans., 4. - preparation of, Trans., 1. Fraxetin, constitution of, 628. Fraxin, constitution of, 628. Freezing points, determination of, 765. - of cadmium, bismuth, and lead, lowering of the, when alloyed with other metals, Trans., 888.

Freezing points of dilute solutions of cane sugar, 678, 1046. - — of isomorphous mixtures, 396. - of very dilute solutions, determination of, 935. Friedel-Crafts' synthesis, 337, 594. Friedelite from Sweden, 1405. Frog muscle, excitability of, in salt solutions, 515. Fructose, d., thermochemistry of, 763. Fucose, thermochemistry of, 763. Fulminuramide, 1417. Fulminuric acid, 690, 1417. Fumarates and maleates, action of Penicillium glaucum and Aspergillus niger on, 820. Fumaric acid, complete transformation of, into maleïc acid, 1306. - transformation of maleïc acid into, 1305. - thermochemistry of, 1041. Fungi, formation and physiological significance of oxalic acid in, 230. Furfuraldehyde, condensation products of, with bases, 1451, 1452. estimation of, 388. —— estimation of, in spirits, 245. - formation of, from glycuronic acid derivatives and from albumin, 1433. oximes of, 1433. thio-, Cahours' polymeride of, 301. - α-trithio-, 301. ---- β-trithio-, 301. Furfurallevulinic acid, δ -, 147. Furfuramidine hydrochloride, 1006. Furfuran compounds, 1006. Furfuraniline, 1452. Furfurantialdoxime, 1434. Furfurimidoethyl ether, 1006. Furfuronitrile, 831. Furfuropinylamine, 997. Furfursynaldoxime, 1433. compound of, with phenyl cyanate, 1434. Furfurylamine, 43. - nitro-, 43. Furfurylcarbamide, 43. Furfurylguanidine salts, 43. Furfurylthiocarbamide, 43. Furnace, combustion, new, 1514. Furyl cyanide, 1006. Furyldimethylhydroxypyrimidine, 1007. Furylhydroxypyrimidinecarboxylic acid, Furylmethylbenzylhydroxypyrimidine, Furylmethylhydroxypyrimidine, 1006. Furylphenylhydroxypyrimidine, 1007. Fusel oil, estimation of, in spirits, 244, 543.

G. Gadolinite, 1410. Gadolinium earth, 1400. Galactan, β-, 1171. Galactonic acid, i-, 825. ---- l-, 826. - - polarisation phenomena of, 1432. Galactonolactone, polarisation phenomena of, 1432. Galactose, i-, 826. ---- l-, 826. ---- thermochemistry of, 763. Galena, analysis of, 662, 663, 1522. - estimation of sulphur in, 658. - separation of lead, silver, and zinc in, 1378. Galipidine, 643. Galipine, 642. Gallein, acetyl derivatives of, 1319. Gallic acid, conversion of, into pyrogallol, 1314. derivatives of, 715. - estimation of, in barks, 390. - - estimation of, in urine, 924. - physiological action of, 904. Gallium, spectrum of, 930. Gallotannic acid, estimation of, in barks, 390. Galvanic cell, practical form of the Latimer-Clark standard, 669. standard, for small differences of potential, 670. - polarisation at small electrodes, 759. Gambier, analysis of, 928. Ganophyllite from Harstigen Mine, Sweden, 1412. Garcinia mangostana, rind of, 205. Garnierite from Norway, 1409. Gas absorptions, improved pipette for, 1124, 1374. - analysis apparatus, clamps for, 524. — batteries, E.M.F. of, 393. -- coal-, flame, experiments on. TRANS., 205, 210. - — flameless incandescence produced by, 768. flames, carbon deposited from, Proc., 1892, 46. - luminosity of, TRANS., 322.- formation ofammonium sulphate by burning, 1389. - formation of sulphuric acid in burning, 1151, 1374, 1389. - heats of combustion of, 396.

- compressed, pyrogenic

carbons in, 797.

hydro-

Gas pipette, improved, 1124, 1374. water-, action of, on iron, Proc., **1891**, 126. Gaseous mixtures, slow combustion of, Gases, absorption coefficients of, 1043. - absorption of, by liquids, 556. — determination οÉ $_{
m the}$ gravity of, 1267. - diffusion of, lecture experiment on, 562. - dissolved in water, extraction of, - effusion of, lecture experiment on, 1150. ---- evolved in the fermentation of mannitol and dulcitol, Trans., 259. - heat of dissolution of, in liquids, - liquefied, determination of the density of, and of their saturated vapours, 934, 1043. - of peptone blood, 363. — solubility of, in water, 107, 271. Gasometric investigations, levelling instrument for, 400. Gasometry, use of potassium ferricyanide in, 526. Gastric digestion, influence of amidoacids on, 742. - juice, estimation of hydrochloric acid in, 97. Gas-volumeter, Proc., 1891, 171. Gas-volumetric analysis, 538. Gelatin, decomposition of, in the human body, 904. Genipa brasiliensis, crystalline constituent of, 1509. Gentiana verna, substances contained in the petals of, 205. Gentiol, 205. Germination, action of boric acid on, - of seeds, influence of vegetable poisons on, 228. Gismondine from Westphalia, 1056. Glanders, ptomaine of, 1258. Glass, action of superheated water and solutions of alkalis and of salts on, 1401. - action of water on, 120. - adhesion of mercury to, in presence of halogens, Trans., 452. —— graphical chemistry of, 1158. - of slides and cover glasses, influence of the composition of, on the durability of microscopic objects, 1276. - solubility of, in cold water, - suitable for chemical purposes,

composition of, 410, 411, 1052.

- wool, presence of lead in, 1375.

Glauber's salt, from the potash mines at Kalusz, 1286. Glaucine, 893. Glucoheptitol, a-, 1167. Glucoheptonic acid, α-, 1166. — β-, 1168. —— lactone, β-, 1168. Glucoheptose, a-, 1166. osazone, α-, 1167. --- phenylhydrazone, α-, 1167. Glucoheptose, B., 1168. phenylhydrazone, β-, 1168. Gluconic acid, polarisation phenomena of, 1432. Gluconolactone, polarisation phenomena of, 1432. Glucononic acid, 1170. Glucononitol, 1170. Glucononose, 1170. Gluco-octitol, a-, 1170. Gluco-octonic acid, a., 1169. — **β**-, 1170. Gluco-octose, a-, 1169. – phenylhydrazone, 1169. Glucosamine, benzoyl derivatives of, Glucose, action of acetic anhydride on, formation of, in the organism, 517. Glucose, d-, thermochemistry of, 763. Glucose. See also Dextrose. Glucose-series, ascent of the, 1164. Glutaconic acid, tetrachloro-, 1463. Glutamic acid and its derivatives, 298. Glutaric acid, action of hydroxylamine on derivatives of, 136. - --- decomposition of, at a high temperature, 40, 297. — pentachloro-, 1186. -thermochemistry of, 1041, Glutarimide, 1484. Glutarimidoxime, 138. Glutimide, 298. Glutin, peptone salts from, 895, 1016. Glycerol, derivatives of, 288. - estimation of, by alkaline permanganate, 544. estimation of, in sweet wines, 1263. - estimation of, in wine, 246, 1529. —— fluorhydrins from, 799. thermochemistry of, 764. Glycerols, crude, analysis of, 544. Glyceryl trinitrate, action of alkaline solutions on, 692. Glycocine and its derivatives, 294. Glycogen, estimation of, in the blood,

- formation of, in the liver from

Glycol, disodium derivative of, 421.

various sugars, 902.

1623Glycol, thermal value of the hydroxyl groups in, 576. Glycolaldehyde, preparation and properties of, 1424. Glycoline, 633. Glycollic acid, crystallography Proc., 1892, 72. - preparation of, Proc., 1892, 72. – anilide, Proc., **1892**, 72. Glycolysis, hepatic, 89. — in blood, 900. Glycuronic acid derivatives, formation of furfuraldehyde from, 1433. Glyoxaline, 1493. action of ethyl chloracetate on, 1493. — constitution of, 1326. nitro-, 1493. Glyoxalsulphonic acid, action of amidobases on the sodium salt of, 1458. Glyoxalylamidoformic acid phenylhydrazone, 442. Glyoximecarboxylic acids, dissociation constants of, 1268. Glyoximedicarboxylic acids, dissociation constants of, 1268. Glyoximes, aliphatic stereoisomeric, Gmelinite from Nova Scotia, 21. Gold, absorption of oxygen by, 943. — allotropic states of, 405. - and cadmium, compound

Trans., 914. - electrolytic detection of, 541.

- electrolytic separation of, from arsenic, from molybdenum, tungsten,

and osmium, 920. - estimation of, by means of hydroxylamine hydrochloride, 662.

- estimation of small quantities of, in base metals, 1525.

— hydrosulphide, Trans., 135.

- lowering of the freezing point of bismuth by, Trans., 897.

- lowering of the freezing point of cadmium by, Trans., 902.

- lowering of the freezing point of lead by, TRANS., 909.

occlusion of hydrogen by, 567.

- sulphides, organosols of, 775.

- tin and cadmium, estimation of, in alloys, 1030.

- use of cadmium in assaying, 919. volumetric estimation of, 1526.

Gold. See also Auric.

Gold-bearing hot spring deposit, 24. Gold-lead alloy, analysis of, Trans., 912.

Grape, chlorophyllic substances of the pericarp of the, 874.

Grapes, green, cause of the acidity of, 589. Graphite, action of nitric acid on, 406, - artificial formation of, 407. --- varieties of, 565.

Gravimetric analysis, simple and rapid method of, 524.

Gravivolumeter, Proc., 1891, 171. Grunerite from Michigan, 793.

Guanamine, synthesis of, 736. Guanidine, amido-, and its derivatives, 1295.

---- nitrite, 53.

---- nitro-, 579, 951, 1295.

--- thermochemistry of, 1142.

--- occurrence of, in plants, 908.

--- picric acid as a reagent for, 950.

- platinothiocyanate, 287.

---- salts, 1142.

— test for, 926.

—— thermochemistry of, 1142.

Gulonic acids, i-, 822.

— optically isomeric, 822.

Gulonolactones, 822.

Gulose, i-. 823.

Gum in plants which yields xylose on saccharification, 1371.

Gums which yield xylose, occurrence of,

Guncotton, estimation of calcium and magnesium in, 1520.

Guvacine, 740.

--- nitroso-, 740.

H.

Hæmatin spectrum, sensitiveness of,

Hæmatite from the Hargita Mountains, 1054.

Hæmatoporphyrin, detection of, urine, 1136.

— in urine, 649.

Hæmatoporphyrinuria, 1118, 1506.

Hæmocyanin, 898, 1370. respiratory value of, 1370.

Hæmoglobin, colloïdal solutions of, TRANS., 157, 162.

— colorimetric estimation of, 1264. - combination of, with oxygen, 1369. Halogen salts, double, 779.

Haloïds, mutual displacement of the,

Haricot beans, cooked, composition of, TRANS., 227.

Heat, expansion of water by, 1382.

- latent, of evaporation, relation of specific inductive capacity to, 258.

 — of fusion of aluminium, 1281.

- mechanical theory of, recent developments of, 395.

Heat, of dissociation of electrolytes, correction in the calculation of, 931.

- of dissolution and of osmotic pressure, theory of, 676, 765.

- of gases in liquids, 1042.

— of salts in water, 676. - of formation of hydrazine and

hydrazoic acid, 261. - of permolybdic acid, 1383.

- - of platinic bromide and its principal derivatives, 3.

 of potassium tricarballylates, 762.

- of salts in alcoholic solution, 262.

 of neutralisation of pyrogallol, 1446.

 of vaporisation of a solution, 1382.

- production in nerves during excitation, 365.

 reconversion of, into chemical energy by production of water-generator gas and carbonic anhydridegenerator gas, 673.

- specific, of aluminium, 673, 1281. - ___ of liquids, at temperatures above the boiling point, 761.

- - calculation of, 2. of the diamond, 761.

Heat. See also Thermochemistry. Heating power of coal, formulæ for cal-

culating, 1143. Heats of combination of bromine and

iodine with magnesium, 762.

of combustion and formation of ethyl alcohol, formic acid, and acetic acid, 1139.

of nitrobenzenes, 4.
of cooked vegetables, TRANS.,

of food constituents, 4.
of products of the distillation

of coal, 395. Heintzite from Leopoldshall, 791.

Helvine from Hungary, 1412. Hemicelluloses, 907. Hemipinic acid, meta-, 180.

Hemipinimide, bromo-, 1210. Henbane seed, constituents of, 231.

Heptacetyl-a-glucoheptitol, 1168. Heptane flame, experiments on, TRANS.,

- refractive power of, at different temperatures, Trans., 294. Heptine, 1235.

- action of sulphuric acid on, 967.

—— nature of, 1065. – nitrosochloride, 1235.

Heptyl acetate, secondary, 1162. Hessite from Botes, 1054.

—— from Mexico, 793.

Heulandite- and desmine-groups, relations between minerals of the, 417.

Hexacetyl-a-glucoheptose, 1167.

Hexadecylacetylene, 1164.

Hexadecylene, bromo-, 1163.

Hexahydrobenzoic acid, properties of,

Hexahydrodimethyldiazine, 507.

Hexahydronicotine, 1365.

Hexahydrophthalic acid, dibromotrans,

Hexahydrophthalic acid, synthesis of, TRANS., 172.

 acids, thermochemistry of, 1041. Hexahydropiperidinecarboxylic acid, 85.

Hexahydroxyaurin, 1470.

Hexamethyleneamine, action of ethyl chloracetate on, 1173.

action of sulphurous anhydride on, 1173.

- benzochloride, 1173.

derivatives of, 1173.

Hexamethylenetetracarboxylic acid, dissociation constant of, TRANS.,

Hexamethyltriamidodiphenyltolylmethane, 190.

Hexamethyltriamidotriphenylarsine,

Hexane, nitration of, 575.

– nitro-, 575.

Hexapropyltrimethylenetrisulphone,

Hexenylsulphuric acid, 951.

Hexethyltrimethylenetrisulphone, 591.

Hexylacetylene, normal, 1064. Homarus vulgaris, blood of, 648.

Homatropine, ψ -, 891.

Homoarecoline, 739.

Homocatechol, 1312.

- and its nitro-derivatives, 1443.

Homocumic acid, paradibromo-, oxidation products of, 604.

Homogentisic acid, estimation of, in urine, 925.

Homolevulinic acid, 961.

Homologous compounds, vapour tension of, 396.

Homonapelline, Trans., 393.

Homoparahydroxybenzaldehyde, ortho-,

Homoparahydroxybenzaldoxime, ortho-,

Homoparahydroxybenzenylamidoxime, ortho-, 320.

Homparahydroxybenzonitrile, ortho-.

Homoparahydroxybenzophenylhydrazone, ortho-, 320.

Homopiperonic acid, a-, 47.

Homosalicenylamidoxime, ortho-, 320. - para-, 319.

Homosalicylaldehyde, ortho-derivatives of, 320.

Homosalicylaldoxime, ortho., 320. para-, 318.

Homosalicylamide, para, 318.

Homosalicylic acid, para-, derivatives of,

Homosalicylonitrile, ortho., 320.

para, 319.

Homosalicylphenylhydrazone, ortho-,

Homosalol, 1092.

Horse fat, 1533. Hübnerite, 793.

Human succus entericus, 1368.

system, influence of hot baths on the excretion of nitrogen and uric acid from the, 1503.

- urine, normal, reducing agents in, 1503.

Humic acid, properties of, 1373.

- spontaneous oxidation

Humin, properties of, 1373.

Hungarian minerals, 1054.

Hydantoïns and bases derived from them, 149.

 γ -substituted, 827, 828.

Hydracetine, paralkyloxy-derivatives of, 1080.

Hydrastine, 223.

- reactions of, 755.

Hydrazides, 843, 981.

- acid, 710.

Hydrazine, heat of formation of, 261. - hydrate, molecular refraction of,

nitride, 113.

- thermochemistry of, 933. 1143.

Hydrazineamidoditolyldisulphonic acid,

Hydrazine-residue, displacement of, by halogens, 842.

Hydrazines, aromatic, action of the chlorides of phosphorus, arsenic, boron, and silicon on, 1324.

- of quinoline, Trans., 782.

 secondary asymmetrical, 456. Hydrazobenzenedisulphonamide, 973.

Hydrazobenzeneorthocarboxylic

- parachlor- and parabrom-, 68. Hydrazo - compounds, intramolecular change in, 840.

Hydrazodicarbonamide, 1298, 1429.

Hydrazodicarbonamidine nitrate, 1298.

Hydrazoic acid, heat of formation of, 261. Hydrazomethylethylisoxazole, 79.

Hydrazones, action of hydrocyanic acid on, 1195.

aromatic, and thionyl chloride, 1324.

Hydrazones, isomeric, 1083. Hydrazoorthodichlorodibenzyl alcohol, 444. Hydrazophenetoïl, para-, 159. Hydrazopropionylhydrazine, 452. Hydrazotoluene, para-, formation of an orthamidotolylamine from, 853. Hydrazotoluenedisulphonamide, 1468. Hydrindone, formation of derivatives of, from halogen cinnamic acids, 1222. ---- orthobrom-, 1222. — parachlor-, 1222. paraiodo-, 1222. Hydriodic acid and hydrogen peroxide, catalytic influence of acids on the velocity of the reaction between, 110. Hydriodoapoquinine, 82. Hydriodoquinine, 82, 640. Hydroantipyrine, 731. Hydrobenzoic acids, 714, 847. Hydroberberine, 1498. ethiodide and related compounds, 1499. Hydrobromic acid, preparation of, 270. - pure, preparation of, TRANS., Hydrobromic acid. See also Hydrogen bromide. Hydrocarbon derived from perseïtol, 1065. Hydrocarbons and their halogen derivatives, saturated and unsaturated, method of determining the constitution of, 285. - aromatic, action of aluminium chloride on, 1309. displacement of hydrogen by haloïds in, 1310. - closed-chain, action of sulphuric acid on, 967. - decomposition of, with steam, — flames of, Trans., 204, 210, 212. — of the methane series, nitration of, --- pyrogenic, in compressed gas, 797. - unsaturated, and phenols, condensation of, 446, 1443. vegetable, natural synthesis of, 1234. Hydrochelidonamic acid, 432. Hydrochelidonanilic acid, 433. Hydrochelidon-bismethylimide, 433. Hydrochelidonic acid, 432. · dioxime, 434. Hydrochelidonimide, 433. Hydrochloric acid, estimation of, in stomach contents, 326, 1125. estimation of, in the gastric - - free, in the stomach, estimation of, 236.

Hydrochloric acid tables, revised, 11. Hydrochlorodimethylpyrone, 811. Hydrochloro-a-methyltropidine, 358. Hydrocinnamenylacrylic acid, 988. oxidation of, 986. Hydrocinnamic acid, parachlor-, 1222. Hydrocotoïn, reactions of, 62. Hydrocoton, nature of, 873. Hydrocoumarone, 1318. Hydrodiffusion, theory of, 935. Hydrofluoranic acid, 1228. Hydrogen, absorption coefficient of, in alcohol, 1043. - and oxygen, admixed, slow combustion of, 562, 938. - behaviour of, towards lead and other metals, 567. - bromide, action of sulphuric acid on, TRANS., 99, 100. - cyanide, action of, on mercurous salts, 1416. - flame, experiments on, TRANS., 215.- Hasselberg's so-called second or compound spectrum of, 1381. - maximum tension with which, is set free from solutions by metals, — nitride, synthesis of, 1151. —— occlusion of, by lead, 942. —— by metals, 567. --- by palladium, lecture experiment, 563. - peroxide, action of iodine and its oxy-acids on, 539. - --- action of, on magnesium, 17. - - action of, on the hydrated oxides of cadmium, zinc, and magnesium, 1278. - - and hydriodic acid, catalytic influence of acids on the velocity of the reaction between, 110. - and potassium permanganate solutions, reaction between, 277. detection of, 1124. — estimation of, 526. — separation of metals in alkaline solution by, 537. ____ - solutions, preparation 270. — test for, 381. — use of, in analysis, 1031. - phosphide, action of, on ethereal solution of bismuth tribromide, 279. - reaction of, with chlorine and oxygen, 1147. solubility of, in water, 108. sulphide, absorption coefficient of,

in water, 1044.

Hydrogen sulphide flame, experiments on, TRANS., 216.

- structure of, 1381.

Hydrolopachol, chlor-, Trans., 631. - dibromo-, Trans., 643.

Hydrolytic action of yeast, velocity of, TRANS., 928.

Hydronaphthoic acids, 191.

Hydrophthalic acids, 1211.

Hydrosorbic acid, oxidation of, 959.

Hydrosulphides, metallic, Trans., 114. Hydrotannic acid, 181.

Hydroxamic acid derivatives, isomeric, 711.

— acids, 461.

- aliphatic, new method of preparing, 698.

- constitution of, 300, 461. of the fatty acids, 828.

Hydroximic acids, 462.

Hydroximidomethylsynoxazolone, 1175. Hydroximidophenylsynoxazolone, 1177.

Hydroxy- γ -acetoisovaleric acid, β -, 325. Hydroxyacetophenone and its derivatives, 845.

Hydroxyacetylpæonol, 846.

Hydroxy-acids and lactones, reciprocal transformations of, 1303.

- a-, and orthodiamines, constitution of the compounds obtained from, 1359.

Hydroxyaldehydes, ortho-, action of acetic chloride on, 1458.

Hydroxyamidobenzophenone, 1227.

Hydroxyamidothymoquinone, 1093.

Hydroxyanthranol, 346.

Hydroxyaurin, 1469.

Hydroxyaurinearboxylic acids, 1469.

Hydroxyaurindicarboxylic acid, 1469. Hydroxyaurins and their carboxylic acids, 855.

Hydroxyazo-dyes, ortho-, constitution

Hydroxybenzaldiphenylmaleïde, 483.

Hydroxybenzenes, condensation of, with nitrobenzaldehydes, 621.

Hydroxybenzofurfuran-α-methyl-βcarboxylic acid, trichloropara-, 609.

Hydroxybenzoic acids, action of heat on, 1208.

Hydroxybenzophenone, 309.

- meta-, and its oximes, 490.

- para-, and its oximes, 489, 490. Hydroxybenzylidenefenchylamine, 1239. Hydroxybenzylideneorthamidophenol, 1451.

Hydroxybenzylideneparamidophenol,

Hydroxybenzylidenepinylamine, para-,

Hydroxy- β_1 -bromo- γ_1 -methyljuloline, a₁-, 497.

Hydroxybutanedisulphonic acid, 424. Hydroxybutane-\(\beta\)-sulphonic sodium salt of, 424.

Hydroxybutyric acid, α-chloro-β-, 295.

--- β-chlor-α-, 296. – γ-trichloro-β-, 429.

γ-, transformation of, into its lactone, 1303.

Hydroxycaprolactone, 959.

Hydroxycarbon compounds, action of non-metallic nitrides and hydronitrides on, 1311.

Hydroxy-3-chloroquinoline, 4-, 877.

- methohydroxide, 1-, 878. Hydroxycinnoline, 1494.

Hydroxydimethylquinoline, 729. Hydroxydinitrodiphenylamine, 310.

Hydroxydiphenylquinoxaline, para-,

Hydroxyditolyldisulphonic acid, amido-, 1468.

Hydroxydixanthones, 504, 1097.

Hydroxyethyl sodium thiosulphate, 1418.

Hydroxyethylbenzoic acid, orthochloronitro-, lactone of, 1230.

Hydroxyglutaric acid, β -, 147.

Hydroxyhydrindenecarboxylamide, tetrachlor-a-, 858.

Hydroxyhydrobenzoïns, diortho-, isomeric, 167.

Hydroxyhydrocyanomesitenelactone,

Hydroxyhydroisohydracetic acid, nitrile

Hydroxyhydrolapachol, Trans., 628. Hydroxyisoquinolines and their derivatives, 877.

Hydroxyketone-dyes, 1224.

Hydroxyketones, aromatic, 62.

- behaviour of, with sulphuric acid and with ammonia, 1226.

Hydroxylamine, alkyl derivatives of, 316, 1456.

constitution of, 1392.
crystallised, preparation of, 771, 1391.

- preparation and properties of, 402, 1391.

thermochemistry of, 1143.

Hydroxylamine-derivatives, physically isomeric, 711.

Hydroxy-β-lapachone, Trans., 649. Hydroxymetamethoxybenzoylcarboxylic acid, para-, 64.

Hydroxymetanitrobenzaldehyde, para-,

Hydroxymethylbenzoic acid, ortho-, 715. · rate of transformation of, into phthalide, 1270.

 $Hydroxy-\gamma_1-methyl-\beta_1\gamma_1-dibromojulol$ ine, a_1 -, 497.

Hydroxymethyleneacetone, stereoisomerism of, 1073. Hydroxy- γ_1 -methyljuloline, α_1 -, 497. Hydroxymethylquinoline, metamidortho-, 506. Hydroxymethylquinolines, 727, 728. - nitro-, 727, 728, 729. Hydroxy-α-naphthaquinone, preparation of, 1098. Hydroxynaphthoil anilide, β -, 1476. Hydroxy- β -naphtho-xanthone, 3'-, 1099. Hydroxynaphtho-xanthones, 1100. Hydroxynaphthyl trihydroxyphenyl ketone and its derivatives, 1226. Hydroxynitrobenzyldiphenylmaleïde, Hydroxynitrobenzyldiphenylmaleïmidine, 486. Hydroxynitroquinoline $\lceil 1:4-\rceil$, 1105. Hydroxyoxindole chloride, amido-, Hydroxyphenanthrazine, para-, 733. Hydroxyphenanthridine, 197. Hydroxyphenonaphtho-xanthone, 1099, Hydroxyphenylhydrindone, 1221. - hydrazone, 1221. Hydroxyphenylhydrocoumarin and its isomerides, 849. Hydroxyphenylpyridone, $\beta\beta$ -dichloroα-, 449. Hydroxyphenylpyridonecarboxylic acid, $\beta\beta$ -dichloro a-, 448. Hydroxypiazthiole, para-, 734. Hydroxypimelic acid, 428. Hydroxypiperidine, α , 1485. Hydroxypropenylamidoxime, B-trichloro-a-, 321. Hydroxypropylparadibromobenzoic acid, 604. Hydroxy-β-phthalimidoethyl sulphide, β-, 130. Hydroxypyridine, α-, 208. Hydroxypyruvic acid, osazone of, 356. Hydroxyquinoline, 4:1-brom-, 354. - 4 : 3 : 1-dibrom-, 354. - 1-, methohydroxide, 878. --- 2-, methiodide, methochloride, and methohydroxide, 876. - 4: 3-brom-, 353. Hydroxyquinolines, halogen alkyl compounds of, 876. Hydroxyquinones, 1098. formation of, from quinones, 45. Hydroxyquinoxaline, para-, 732. Hydroxytetrahydrobenzyldimethylamine, Δ^{3} -, 359. Hydroxytetrahydronaphthoic acid,

bromo-, lactone of, 193.

Hydroxythymoquinone, 1098.

Trans., 44.

Hydroxytetramethylenecarboxylic acid,

Hydroxy- $\beta_1\beta_1\gamma_1$ -tribromo- γ_1 -methyljulolidine, a_1 -, 498. Hydroxyvaleric acid, γ-, transformation of, into its lactone, 1303. Hydroxyvalerolactone, 958. Hydroxyxanthones, 504, 1096, 1100. of the naphthalene and quinoline series, 1098. Hyoscine, 1255, 1366, 1498. composition of, 1498. the Hyoscyamine, existence of, $_{
m in}$ lettuce, Trans., 90. Hypophosphates, 403. Hyposantonic acid, 870, 1353. Hyposantonin, 870.

Hypoxanthine, 220. I. Imidazole, 313. Imidazoles, 1326. Imidazolone, μ-, 1327. Imidazolyl mercaptan, μ -, 1328. - methyl sulphide, μ -, 1328. Imides, substituted, modes of formation of, 1204. Imidoacetates, constitution of, 982. 1 midodiazoles, 313. Imidole, 312. Imidosulphonamide, Trans., 952. Imidosulphonates, TRANS., 943. Imidosulphonic acid, Trans., 945. acids, 700. Imidothiocarbamates, 465. Inanition, bile during, 225. Incandescence, flameless, produced by coal gas, 768. Indazole-derivatives, 67. Indigo-blue, products from, 991. Indigodisulphonic acid, synthesis of, 69. Indigo-green, 991. Indium hydrosulphide, TRANS., 134. Indole, nitroso-, molecular weight of, synthesis of, from tartaric acid and aniline, 66. Indoles, substituted, formation of, 1465. Indothymol, 1311. Indoxazen, 993. Induline-group, 341. Indulines, 492. formation of, 1476. Inositol, thermochemistry, of, 764. Inulin, thermochemistry of, 764. Invertebrates, blood of, 648. Iodates, estimation of, in potassium iodide, 657. Iodic acid and its salts, 1388. use of, in quantitative analysis, 1027.

Iodides, estimation of, 527.

- Iodine, action of, on potassium chlorate, TRANS., 925. action of, on potassium sulphite and thiosulphate, TRANS., 1083. – action of, on sodium hydrogen sulphite, 681. - and its oxy-acids, action of, on hydrogen peroxide, 539. bromine and chlorine, exchange of, between inorganic and organic haloïd compounds, 574. —— separation of, 1028. —— chlorine compounds of, 1387. detection of bromine and chlorine in presence of, 1514. - fixation of, by starch, 578. - free, estimation of, 539. ---- heat of combination of, with magnesium, 762. — solubility of, in chloroform, 769. - trichloride, 1388. Iodochromate, 124. Iodoform, estimation of, 1528.
- Iolite, composition of, 793. Ions, colour of the, 1137. electromotive activity of the, 671. Iridium, removal of platinum from,

Iodometry, 1514.

- Iron, action of carbonic oxide on, 568. - action of chlorine and of bromine on, 118.
- action of nitric acid on, 1278. action of nitric oxide, on, 1152.
- action of water gas on, Proc., 1891, 126. – ammonium sulphates, 943.

and aluminium, estimation of, by the Glaser method, 755.

 estimation of, in the presence of phosphoric acid, 755.

- cast, calorimetric researches on the condition of silicon and aluminium in, 19.

calorimetric estimation of, 240, 1132.

- direct estimation of aluminium in.

- distribution and condition of, in barley, 1509.

- electrolytic separation of, 917.
 estimation of carbon in, 913, 1030. ---- estimation of, in aluminium, 1131.
- estimation of, in phosphates, 536. - estimation of manganese in, 916,
- 1030, 1514. estimation of phosphorus in, 528,
- 529, 911. — estimation of sulphur in, 1376.
- Hamburger's method for the estimation of small quantities of, 1525. --- in bone-black, 1053.

- Iron, intake of, by the fœtus, 516. in the fœtal organism, 1502.
- —— in the liver, 1503.
- manganese, and calcium, separation
- metallic, estimation of, in ferrum reductum, 1524.
- native, from Cañon Diablo, 947. - occlusion of hydrogen by, 567.
- pig, estimation of phosphorus in, 912.
- estimation of sulphur in, 382.
- precipitation of copper by, 276. - salts, action of alkaline polysulph-
- ides on, 537. - utilisation of burnt pyrites in the preparation of, 1281.
- separation of, from cobalt, nickel, and manganese, 103.
- testing, for arsenic, 1030.
- volumetric estimation of, 240.
- wrought, estimation of slag in, TRANS., 551.
- Iron-ores, estimation of phosphorus in,
- genesis of, by replacement of limestone, 126.
- of Central Russia, 689.
- of the Marquette district, Michigan, 794.
- See also Ferric and Ferrous. Isaldoxime-derivatives, intramolecular
- change of, 50. Isidiomatic compounds, 1366.
- Isoamyl alcohol, vapour tension of,
- iodide, action of, on trimethylamine, 805.
- Isoamylaniline, 44.
- Isoamylbenzene, 985.
- Isoamylene, condensation of, with phenols, 446.
- Isoamylguanamine, formation of, 736. Isoamylparisopropyltoluene, 985.
- Isoamylthymol, 446.
- Isoanemonic acid, 1241.
- Isoanemonin, 1241.
- Isoanilides, 705.
- Isoantipyrine, 635.
- Isoapiole, derivatives of, 1315. - nitrosite, 447.
- Isoapoquinine, 82.
- Isoarabic acid, 1180, 1432.
- Isobenzaldiphenylmaleide, 486.
- Isobenzaldiphenylmalermidine, 486.
- Isobutaldehyde, action of zinc and ethyl chlorocetate on, 1300.
- chlor-, 1292.
- Isobutyl alcohol, action of bromine on, 809.

Isomalic acid, 824.

Isomaltose, 1293,

Isobutyl alcohol, action of chlorine on, 1292. vapour tension of, 397. --- iodide, action of, on trimethylamine, 805. Isobutylallylamine, 31. Isobutylallylphenylcarbamide, 31. Isobutylallylphenylthiocarbamide, 31. Isobutylamine, chloro- and dichloro-, Isobutylbenzene (b. p. 165-170°), 44. Isobutylbenzyl orthoxylyl ketone, 338. Isobutylbenzylparatolylcarbamide, 1084. Isobutyldibenzylcarbamide, 1083. Isobutylisobutylideneamine, 1173. Isobutylparaditolylcarbamide, 1083. Ioobutylparisopropyltoluene, ortho-,985. Isobutylphenylhydrazone, thionyl-, Isobutylphenylthiocarbamide, symmetrical, 702. Isobutylpropargylamine, 32. Isobutylpropylamine, 32. Isobutyric acid, bromo-, action of ammonia on, 1302. - diphenylhydrazide, 981. – phenylhydrazide, 981. Isocamphenol, properties of, 199. Isocamphor, 199. Isocarbostyril, 882. Isocarbostyrilearboxylic acid, 882, 970. Isocinchonidinesulphonic acid, 514. Isocinchonine, 222. Isocinchoninesulphonic acid, 515. Isoconchininesulphonic acid, 514. Isocoumarinearboxylic acid, 970. Isocrotonaldehyde, presence of, in a brandy, 810. Isocrotonic acid, derivatives of, 295. — oxidation of, 957. Isocyanates, aromatic, 832. Isocyanides, refractive powers of, 757. Isocyanoparatolyl dichloride, 1442. Isocyanophenyl dichloride, 1439. Isocyanorthotolyl chloride, 1441. Isodehydrocholal, 741. - chloro-, 741. metahydroxy-Iso-β-dichlorhydrin benzoate, 471. Isodihydroxybutyric acid, 958. Isodihydroxycaproic acid, salts of, 959. Isodissociation, laws of, 3. Isoerucic acid, 812. Isoethenyldiamidotoluene, derivatives of, 838. Isoeugenol and its derivatives, 45. Isofenchonoxime, β -, 1237. Isohexeric acid, 958. Isohydrotannic acid, 182. Isohydroxycaprolactone, 959. I sohyposantonic acid, 870. Isohyposantonin, 870.

Isomangostin, 206. Isomerism, special case of, 1067. Isomethylpæonol, 846. Isomorphous mixtures, freezing point of, Isonaphthazarin, 494, 720. Isonipecotinic acid, 1486. Isonitroso-compounds, action of sulphurous acid on, 475. Isoparaxylalphthalide, 474. Isoparaxylalphthalimidine, 474. Isophthalamidine nitrite, 53. Isophthalic acid, asymmetrical amido-1464. ---- bromo-, 337. Isoprene, spontaneous conversion of, into caoutchouc, 1482. Isopropane, nitro-, action of methyl iodide and chloroform on, 1290. Isopropyl.alcohol, action of bromine on, - and sodium, thermochemistry of, 674. properties of, 691. sodium thiosulphate, 1418. Isopropylacetothienone, β -, 442. Isopropylbenzene, action of aluminium chloride on, 1309. Isopropylbenzophenone and its oximes, Isopropylcoumarin, a-, derivatives of, Isopropyleneparamidophenol, 1451. Isopropylmalic acid, 428. Isopropylphthalimide, 158. Isopropylpropiothienone, β -, 443. Isopropylthiocoumarin, 330. Isopropylthiophen, β -, 442. – mercuric chloride, β-, 829. Isopropyltricarballylic acid, 42. Isoquinine, 82. Isoquininesulphonic acid, 514. Isoquinoline methiodide, oxidation of, 730. preparation of, from naphthalene, 882. - pyrogenic synthesis of, 739. - sulphonation of, 876. Isosaccharin, specific rotatory power of, 1421.Isosafrole, action of nitrous acid on, action of potash and methyl alcohol on, 972. nitrosite, 447. -- oxidation of, 310, 328. the oxymethylene group in, 972. Isosafroledioxime peroxide, 1198.

Isosantinic acid, 872.

Isostrychnic acid, isonitroso-, 1012. Isosuccinic acid, bromo-, action of alcoholic potash on, 1305.

———— thermochemistry of, 1140. Isosuccinimide, alkyl derivatives of, 701. Isoterpene from the resin of *Pinus abies*, 625.

Isothermal curves for carbonic anhydride, 3.

Isothermals, change of the empirical and theoretical, of mixtures of two substances with the temperature, 259. Isovaleric acid, α-bromo-, 427.

Isovaleridenetoluidine, 1194.

1soxazoles, 506.

J.

Jacobsite from Sweden, 1404. Julole, 496, 883. Julole-violet, 498. Julole-violet-base, 499. Julolidine, 1492.

K.

Kamacite from the Welland meteoric iron, 24

Kamés, relation between truffles and, 654.

Kaolin, estimation of, in arable soils, 1026.

- from Colorado, 1406.

—— in arable soil, 1026. Karlsbad salts, analysis of, 659.

Keto- γ_1 -benzoxyjuloline, α_1 -, 884.

Keto- γ_1 -chlorojuloline, α_1 -, 884.

Ketodimethyldihydroquinoxaline, 1108. Keto- β_1 -ethyl- γ_1 -methyljuloline, α_1 -, and its bromo- and nitro-derivatives, 883.

its bromo- and nitro-derivatives, 883. Ketohydroxyhydrindenecarboxylamide,

_ dichloro-, 859.

Keto-γ₁-hydroxyjuloline, α₁-, 884 Ketomethylbenzyldihydroquinoxaline,

1108.

Ketomethylethyldihydroguinovaline

Ketomethylethyldihydroquinoxaline, 1108.

Keto- γ_1 -methyljulolidine, α_1 -, 497. Ketomethyljuloline, dyes obtained from,

498.

oxidation and reduction of, 496.

Ketomethylphenyldihydrophenoquinoxaline, 1108.

Ketones, action of paramidodimethyl-

Ketones, action of paramidodimethylaniline on, 854.

- action of potassium cyanide on halogen derivatives of, 324.

— action of sodium on, 169.

aromatic alkyl, and their oximes, 985. Ketones, aromatic, metallic compounds of, 1205.

— nitro-, preparation of, 1459.
— bromo-, formation of, by the action of bromine on the alcohols of the ethyl series, 809.

colour reaction of, with aromatic

nitro-compounds, 1263.
— compounds of, with mercuric chloride, 828.

fatty, action of chlorine on, 424, 810.

— mixed, oxidation of, 35.

— of the quinoline series, 1488.

---- physiological action of, 1506.

— unsaturated γ -, action of phenylhydrazine on, 995.

Ketonic acids, oximes of, 327.

Ketonic compounds, magnetic rotation of, Trans., 800.

Ketonic oxygen, estimation of, 546, 1530.

for, 451.

Keto- $β_1$ -nitroso- $γ_1$ -hydroxyjuloline, $α_1$ -, 884.

Ketophenyl-γ-piperidone, pentachloroα-, 449.

Ketoquinazolines, new synthesis of, 1495.

Ketoximes, aromatic alkyl, 1200.

--- influence of substituting radicles on the configuration of, 487.
--- configuration of, 426.

Ketoximic acids, γ -, configuration of, 1202.

Kidney disease, excretion of nitrogen in, 743, 1504.

Knoxvillite, 1407.

Kuromoji oil, 1480.

Kyaphenine, formation and preparation of, 1183.

L.

Lactic acid, action of the bacillus of malignant edema on, 91.

formation of, in the organism, 517, 1112.

resolution of, into its optically active components, TRANS., 754.

Lactorite, 550. Lactones, 812, 956.

--- and hydroxy-acids, reciprocal transformations of, 1303.

Lead potassium iodides, 779.

Lactonic acids, 812, 956. Lactose, acetyl-derivatives of, 948 optically different modification of, 948. Lapachic acid, bromo-, Paterno's, Trans., 638. - constitution of, TRANS.. Lapachol, constitution of, Trans., 611. Lapachone, α-, TRANS., 635. Lapachone, β-, TRANS., 626. - bromo-, TRANS., 638. Lard, detection of vegetable oils in, 1133. Lard-oil, iodine number of, by Hubl's method, 664. Latex of Ficus carica, 653. Lathyrus, analyses of, 522. Laurel, oil of, 722. Lauric acid, action of bromine on, Lautarite, 124. Lavender, oil of, 868, 1235, 1347. Lawendol, 868. Law of Van't Hoff, applicability of Planck's proof to the, 935. Layers, formation of, in solutions of salts in mixtures of water and organic liquids, 1146. Lead, action of nitric acid on, 410, 1403. - action of nitric oxide on, 1151. -- and bismuth, separation of, by means of bromine vapour, 540, 549. - and silver, separation of, 1522. — bromosulphide, 685. --- chlorosulphide, 685. ---- chromate, 567. — basic, 567.
— dioxide, electrical conductivity of, - double halogen salts of, 779. —— electrolytic detection of, 541. ---- estimation of, 539, 1522. -- hydrogen imidosulphonate, TRANS., 970. —— imidosulphonate, Trans., 969. - five-eighths oxy-, Trans., - hemihydroxy-, Trans., 970. - lowering of the freezing point of cadmium by, Trans., 903. - lowering of the freezing point of, when alloyed with other metals, TRANS., 888, 904. magnesium bromide, 566. --- new oxylodide of, 1280. — nitride, 112. —— occlusion of hydrogen by, 942. — potassium bromide, 779.

- --- iodide, equilibrium of, with

its aqueous solution, 560.

of bismuth separation 385. - silver, and zinc, separation of, in galena and blende, 1378. sulphate, analysis of, 1522. ---- crystalline, 1399. - tin, bismuth, and cadmium, separation of, 754. -- volumetric estimation of, 1375. Lead-gold alloy, analysis of, Trans., Lead-potassium alloy, 773. Lead-sodium alloy, 773. Lead-thallium alloy, analyses of, TRANS., Leaves, compounds containing chlorophyll in, 746. etiolated, acquisition of green colour and growth of, 520. effect of light on, 521. - green and etiolated, amount of proteïds in, 520. - of the apple tree, analyses of, 1372. young, absence of oxalates in, Lecture experiment, burning sulphur in oxygen, 679. --- combination of electrolytic gas, 562. - diffusion of gases, 562. - dissociation of phosphonium bromide, 401. - effusion of gases, 1150. ---- occlusion of hydrogen by palladium, 563. - to illustrate the phenomena of coal dust explosions, TRANS., 414. Leguminosæ, composition of, 521. - source of the nitrogen of, 367, Lemon oil, crystalline products from, - reaction of, with mercurous salts, 386. Lemons, Californian, analyses of, 1511. Lepidone-violet, 499. — base, 499. Lettuce, cooked, composition of, TRANS., - existence of hyoscyamine Trans., 90. Leucæmic patients, peptones in the blood and organs of, 519. Leucite. artificial reproduction of. 1161. Leucomaine, a new, 1367. Level for gas analysis, 400. Levulinic acid, action of iodic acid on, 1179.

Levulinic acid, condensation of, with aldehydes, 147.

- condensation of, with furfuraldehyde, 442.

— isonitroso-, 1074.

- --- magnetic rotation of, Trans.,

-- --- phenylhydrazonehydrazide of, 436.

--- oxime, 1202.

Levulinicphenylhydrazoneazobenzene,

Levulose, cane-sugar, and invert-sugar, examination of, 248.

Licareol, 1236.

Licarcone, 1236.

Licari kanali, essential oil of, 1236.

Light, action of, on oxylydrogen gas,

- action of, on ruthenium peroxide, 282.

- action of, on silver chloride, 775; TRANS., 728.

- effect of, on etiolated leaves, 521. Light-intensity, measurement of, 253.

Lignin, 802.

Lignite tar, 1075.

Lignocellulose, reaction of, with ferric ferricyanide, 1421.

Lignocelluloses, 693.

---- constitution of, 129.

Lime, action of, as a manure, with especial regard to paddy fields, 93.

- action of, on heavy loams, 523. Lime-seed, oil of, 92.

Limettin, TRANS., 344.

- action of hydrating agents on, TRANS., 351.

- action of hydriodic acid on, TRANS., 350.

--- dibromo-, Trans., 348.

---- nitro-, TRANS., 350.

--- oxidation of, TRANS., 346, 319.

- trichloro-, TRANS., 349.

Limonene nitrosochlorides, 1349.

Limonenenitrolanilide, hydrochloro-,

Limonenenitrolanilides, 1348.

uitroso-, 1348.

Limonenenitrolbenzylamine, hvdrochloro, 1349.

Limonene-series, isomerism in the, 1348.

Limonite in Texas, 1405.

Linaloöl, 868, 1347.

Linamarin, 502.

Lindera sericea, oil of, 1480.

Linseed, sugar from, 1293.

Liquids, application of capillary phenomena to the analysis of, 236.

- calculation of the specific heat of, 2.

Liquids, heat of dissolution of gases in, 1042.

- mixed, critical temperatures of, 262.

- molecular weights of, as evinced by their boiling points, 107.

- organic, as solvents for metallic salts, 558.

· relations between compressibility and indices of refraction of, 669.

specific heat of, at temperatures above the boiling point, 761.

- temperatures of saturated vapours of various, under the same pressure,

1143. viscosity of, 1143.

Lithium bromate, 1275.

- chloride, boiling points of solutions of, Trans., 341.

copper chloride, 118.

— double chlorides of, with metals of the magnesium group, 1275.

— hypophosphate, 403.

---- nitride, 565.

---- stannibromide, 121.

Liver, horse's, cystin and xanthine in the, 516.

iron in the, 1503.

Live-weight, influence of various salts on, 647.

Loam, heavy, fertility of, increased by lime, 523.

Lotus corniculatus and L. uliginosus, composition of, 522. Lubricating oils, rapid determination of

the composition of, 665. Luminosity of coal-gas flames, Trans.,

Lungs, influence of oxygen on the separation of carbonic anhydride in the,

Lupanine, the alkaloïd of the blue lupine, 223.

Lupeose, 1171.

Lupins, yellow, assimilation of free nitrogen by, 371, 372, 374.

Lupinus albus, alkaloïds of, 892.

Luteocobalt diaminechromium thiocyanate, 1001.

Lutidine, 2:6-, action of benzaldehyde on, 1360.

Lutidinic acid, 75.

Lycium barbarum, alkaloïds of, 232.

Lycopodium saururus, alkaloids from, 894

Lysine, 1500.

M.

Magdala-red, solutions of, Trans., 160, 163.

1634 Magnesium acetate, action of magnesium oxide and lead oxide on, 1178. - action of chlorine and of bromine on, 118. - action of hydrogen peroxide and of water saturated with carbonic anhydride on, 17. --- action of nitric acid on, 1403. - action of, on ammonia, 409. --- action of, on chlorides, 776. ---- chloride, boiling points of solutions of, TRANS., 341. - estimation of, in guncotton, 1520. - heats of combination of bromine and iodine with, 762. - hypophosphate, 404. — lead bromide, 566. lowering of the freezing point of lead by, TRANS., 904. - manganese chloride and bromide, 781. ---- nitride, 409. - orthoborate, 404. - oxide, action of hydrogen peroxide on, 1278. · permolybdate, 1160. – stannibromide, 121. Magnetic rotation of compounds supposed to contain acetyl, or to be of ketonic origin. TRANS., 800.

of dissolved salts, Proc., 1892, 12. Magnetism and atomic weight, 672. - of organic compounds, 672. Maize, proteïds of, 379, 746, 749. Maize-fibrin, 749. Mäize-myosin, 747. Maize-vitellin, 747. Maleïc acid, complete transformation of fumaric acid into, 1306.

aric acid, 297, 1305.

onyl chloride on, 511.

Malonamide, diamido-, 40.

imido-, 40.

Malondianilide, 1072. Malonic acid, dibromo-, 1140.

cyanide on, 1032.

wort, 248.

tion, 1419.

anhydride, preparation of, 963.

succinic, and tartaric acids, 1531.

- — thermochemistry of, 260.

- --- halogen derivatives of, 39.

Malic acid, new synthesis of, 429.

- preparation of the amide, anilide, and phenylhydrazide of, 473. Mandelic-\(\psi\)-trope ine, 891. Manganese, action of carbonic oxide on, 568. — action of nitric acid on, 1403. and zinc, separation of, 384. - calcium, and iron, separation of, 916. - compounds, 1052. - double halogen salts of, 780. --- estimation of, by the chlorate method, 1132. - estimation of, in iron and steel, 816, 1030, 1524. estimation of, in its ores and alloys, 536. estimation of, in slags and ores, 385. - hydroxide from the Euganeen, Italy, 689. from, 240. - separation of zinc from, 537. ---- sodium metaphosphate, 1053. — tetrachloride, 19. — — hypothetical, 687. Manganese-ores, estimation of cobalt in, Manganese-spar from Arzberg, 1406. - from Scharfenberg, 1406. Manganic hydrogen pyrophosphate, - potassium pyrophosphate, 1052. — thermochemistry of, 1041.
— transformation of, into fum-Manganophyll from Harstigen Mine, Sweden, 1411. Manganous oxide, action of nitric oxide on, 1152. chloride, 780. - - separation of, from citric, Mangostin, 205. Mannitol, a pure fermentation of, Trans., 254. —— diphenylhydrazine, action of carb-- and boric acid, freezing points of aqueous solutions of, 263. -- fermentation of, with Bacillus ethaceticus, Trans., 432. — monosodium, 800.
— nitrate, action of alkaline solutions on, 692. Maltose, action of alkaline mercuric occurrence of, in the fruit of the cherry laurel, 908. - estimation of, in beer and beer thermochemistry of, 764. Mannose, detection of, in vegetable pro-- hydrate, disappearance of the ducts, 250. Manure, action of lime as a, with espemultirotation of, in ammoniacal solucial regard to paddy fields, 93.

Maltose, thermochemistry of, 764.

Mandelic acid and its nitrile, 1088.

blood of, 1257.

Mandelamide, 1203.

Mammals, formation of uric acid in the

Manure, farmyard, fermentations of, 1123.

-value of animal aébris as nitrogenous, 96.

Manures, nitrogenous, preservatives for,

Margarin, detection of, in butter, 1034. - estimation of fat in, 392.

Martite from Brazil, 1055.

Masrite, Trans., 494.

Masrium, Trans., 494.

Meat, raw and boiled, digestibility of,

Mechanical theory of heat, recent developments of, 395.

Medicago, analyses of different species of, 522.

Medicagol, 746.

Meionite, Vesuvian, formula of, 417.

Meldometer, 414.

Melicitose, thermochemistry of, 764.

Melilite, composition of, 1410.

- formation of, during the burning of Portland cement, 416.

Melilite-bearing rock from Canada, 1058. Melilotus alba and M. officinalis, composition of, 522.

Melitose, thermochemistry of, 764. Melting point, depression of, by phenol,

- of minerals, determination of, 414.

Melting points of mixtures, 1139. Membranes, precipitated, permeability of, 1383.

Menthene, 866, 1479.

---- constitution of, 624.

— nitrosochloride, 1479. — preparation of, 623.

Menthodicarboxylic acid, 202. Menthol and its derivatives, 866.

- constitution of, 624, 625.

- conversion of, into cymene, 200. Menthonaphthene, 866.

Menthone and its derivatives, 867.

Menthyl ethyl ether, 200, 348.

Menthylamine, 500, 723.

Menyanthes trifoliata, constituents of,

Menyanthin, 1262.

Menyanthol, 1262.

Mercapturic acids, oxidation products of, 1090.

Mercurammonium compounds, 276.

Mercuric cadmium cyanide, Trans., 687. - chloride, boiling points of solutions of, TRANS., 340.

- solubility of, in various

organic liquids, 558.

- cyanide, action of aluminium and of nickel, &c., on, dissolved in water and in organic solvents, 797.

Mercuric cyanide, action of ammonia on, 575.

- - boiling points of solutions of, TRANS., 340.

- disodium imidosulphonate, TRANS., 980.

- fulminate, action of chlorine on, 26.

---- constitution of, 25.

- thiocyanate, double salts of, with other thiocyanates, 10.

zinc cyanide, Trans., 666.

Mercurioanilido-compounds, 1448.

Mercuriophenylamine, 1448. Mercurosammonium compounds, so-

called, 685. Mercurous hypochlorosulphite, 780.

---- nitride, 112.

- oxide, action of sulphur on, 770.

---- permolybdate, 1160.

- salts, action of ammonia on, 686. - action of hydrogen cyanide

on, 1416.

Mercury, action of nitric acid on, 1403. - adhesion of, to glass in presence of halogens, TRANS., 452.

- compounds of acetylene, Proc, 1892, 110.

 dihydrogen imidosulphonate, TRANS., 977.

- electrolytic separation of, 239, 541, 920.

- electrolytic separation of, from copper, 239.

electrolytic separation of, from osmium, 920.

- hydrosulphides, Trans., 123.

- imidosulphonates, TRANS., 976.

- constitution of, Trans., 985. —— lowering of the freezing point of bismuth by, Trans., 897.

-lowering of the freezing point of cadmium by, Trans., 903.

- lowering of the freezing point of lead by, TRANS., 910.

phosphide, 1398.

— potassiumimidosulphonate, Trans. 976.

- separation of, from arsenic, phosphoric, and nitric acids, and from chlorine and sodium, 530.

- sodium imidosulphonates, Trans., 980.

 sulphide, colloïdal solutions of, Trans., 138.

- volumetric estimation of, 663; Trans., 364.

Mesaconic acid, conversion of, into its isomerides by soda, 297.

Mesitylene, derivatives of, 329.

—— fluoro-, 968.

- iodo-, 967.

Mesitylglycollic acid, 329.

1636 Mesitylglycollic chloralide, 329. Mesitylglyoxylic acid, salts of, 329. Mesoxaldehyde, symmetrical bisphenylhydrazone of, 162. Mesoxanilide, 1439. —— alcoholate, 1439. — hydrate, 1440. - imidochloride, 1439. Mesoxanilidephenylhydrazone, 1439. Mesoxatoluidide hydrate, 1442. Metabolism of pigs fed on corn cockle, 1018. Metallic chlorides, action of magnesium on, 777. films, colours and absorption spectra of, 1037. - oxides, action of sulphur and water on, 770. Metals, action of nitric oxide on, 1151, - action of, on salts dissolved in organic liquids, 797. and nitric acid, reaction between, 1402. - direct combination of chlorine with, 118, 401. - direct combination of chlorine and bromine with, 118. - electrical behaviour of, in salt solutions, 393. electrical volatility of, 1037. electrolytic estimation of, 1521. ---- electrolytic estimation of, as amalgams, 753. - heavy, volumetric estimation of, 1521. – nitro-, 1390. -transportation of solids in vacuum by the vapours of, 1386. Metapectic acid, 291. Metaphosphates, 1045. Meteoric iron, discovery of diamonds in, ---- from Colfax Township, North Carolina, 1059. - from Maryland, 794. - Welland, kamicite, tænite, and plessite from, 24. Meteorite from Kansas, 795. — of Jelica, 795. of Ljungby, 1060. --- of Misshof, in Kurland, Russia, - the Tonganoxie, 284. Meteorites from Atacama, Chili, 1413. - new, 1413. — of Turgaisk, 418.

Methane, absorption coefficient of, in

- action of heat on, Trans., 328.

- flame, experiments on, Trans.,

water and in alcohol, 1044.

310.

Methane, iodonitro-, preparation of, 1415. Methaneazobenzene, iodonitro-, 1416. Methaneazotoluene, iodonitro-, 1416. Methenylamidoximeacethydroxamic acid, 139. Methenylnaphthaleneamidine, 1496. Methoxyacetophenone, ortho-, 845. Methoxyacetophenonecarboxylic acid. Methoxybenzhydrylamine, para-, 338. Methoxybenzophenone, para-, chloride. hydrazones of, 340, 598. Methoxybenzophenone-β-naphthylamine, para-, 339. Methoxybenzophenoneparamidobenzoie acid, para-, 340. Methoxybenzophenoneparatoluidine, para-, 339. Methoxybenzoylacetic acid, ortho-, 844. Methoxybenzylideneorthamidophenol, Methoxybenzylideneparamidophenol, 1451.Methoxycresol, 447. Methoxydiazobenzenesulphonic acid. para-, 1081. Methoxyethylbenzoic acid, orthochloronitro-, 1231. Methoxyjulolidine, para-, 1492. Methoxyorthohydroxyacetophenone, para-, 59. Methoxyquinine methiodide, 1363. Methoxyparahydroxybenzophenylhydrazone, ortho-, 317. Methoxyphenyldimethylpyrazolone, para-, 1082. Methoxyphenylhydrazine, para-, 1082. Methoxyphenylhydrazinesulphonic acid, ${
m salts}$ of, 1081. Methoxyphenyloximidoacetic acid. para-, 328. Methoxyphenylphenylpyrazolone, ortho-, 844. Methoxypyridine, α-, 209. Methyl acetoneoxalate, magnetic rotation of, TRANS., 822, 853. acetophenoneoxalate, magnetic rotation of, Trans., 833, 863. alcohol, vapour tension of, 397. - alloethyl camphorate, ortho-, 1102. — α-amidopropionate hydrochloride, 453. - apionylglyoxylate, 328. azomethylenecarboxylate, 452. - benzeneazocamphocarboxylate, 1344.- benzenesulphonate, 1220. - bromobenzenesulphonate (para-), 1220. bromotetramethylenecarboxylate.

TRANS., 43.

Methyl butyl ether, 27.	Methyl naphthyl ketones, action of phos-
—— ketone, oxidation of, 36.	phoric chloride on, 465.
—— camphocarboxylates, 1342.	β -naphthylsulphinate, 623.
camphorate, 1346.	nanhthyleulphonaformate 623
	— apinantes, normal and pseudo-,
carboxymethylacetoacetate, 1070.	opianates, normai and pseudo-,
chlorobenzenesulphonate (para-),	
1220.	—— phenylamidoacetate, 468.
cumaroketone (ortho-), 169.	
—— a-diazopropionate, 452.	phenylimidomethylphenylthio-
dicarboxyglutarate, 1040.	carbamate, 466.
— thermochemistry of, 1041.	— phenylmethyltriazolecarboxylate,
diamental leads to the late	
dioxymethylenephenylglyoxylate,	638.
327.	—— propyl ether, 27. —— ketone, hepatchloro-, 1463. —— hexachloro-, 1462.
dioxymethylenephenyloximido-	—— ketone, hepatchloro-, 1463.
acetate, 327.	hexachloro-, 1462.
diphenyl tricyanide, formation of,	α-pyridyllactate, 76.
1184.	—— salts of abnormal structure, 1208.
	totachlane a hadronahadriadana
ethyl ketone, action of chlorine on,	— tetrachloro-α-hydroxyhydrindene-
425.	carboxylate, 858.
ketoxime, action of phos-	tetrahydroquinolinecarboxylate,
phoric chloride on, 426.	355.
- sulphide, preparation of,	trimethylenetetracarboxylate
1422.	(1:1:2:2-), 1040.
1	
hexyl ketone, isonitroso-, 971.	Methylacetylacetone, magnetic rotation
— — normal, 293. — ketoxime, 427.	of, Trans., 813, 842, 848.
—— ketoxime, 427.	refractive and dispersive powers
— hydrogen camphorate, 1346.	of, Trans., 850, 852.
	Methylacetylacetonitrile, 810.
allo-, Trans., 1093.	Methylacetylcarbinol, 810.
Trans 1004	
Trans., 1094.	Methylacetylcarbinyl acetate and butyr-
	ate, 810.
1088.	Methyl- β -acetylquinoline, α -, 1107.
crystallography of,	Methylacridone, 881.
Trans., 1088.	Methylalloxazine, 70.
camphorates, action of phenyl-	Methylamidocrotonanilide, 965.
carbimide on, 1347.	Methylamidocrotonanilide, β -, 708, 1106.
caroning on, 1947.	
phthalate, dissociation con-	Methylamidoparadiketohexene, penta-
stant of, Trans., 717.	chloro-, 449.
— — preparation of, 1204. — succinate, dissociation con-	Methylamine hydrogen diaminechrom-
succinate, dissociation con-	ium thiocyanate, 1000.
stant of, Trans., 716.	—— malate, action of heat on, 820.
- hydroxycinnamyl ketone (ortho-)	— platinothiocyanate, 286.
and its derivatives, 169.	
	Methylarecaïdine, 739.
α-hydroxypropionate, nitro-deri-	Methylbenzenes, condensation of, with
vatives of, 583.	allyl alcohol, 156.
- imidomethylphenylthiocarbamate,	Methylbenzylamine, 65.
466.	Methylbenzylmetaxylidine, 1320.
- imidophenylthiocarbamate, 465.	Methylbenzylorthotoluidine, 313.
—— imidophenylthiocarbamate, 465. —— isoamyl ketone, oxidation of, 36.	Methyl- μ -benzyloxazoline, β -, 214.
isobutyl ketone, 36.	Methylbergaptic acid, 71.
isopropyl ketoxime, action of phos-	Methylbromophenyldibromopyrazolone,
phoric chloride on, 427.	1246.
—— licaryl ether, 1236.	Methylcamphor, 1343.
mesitylenecarboxylate, 329, 715.	Methylcarbazacridine, 343.
— methylcamphocarboxylate, 1344.	Methylchlorostilbene, 1224.
methylimidomethylphenylthio-	Methyl-μ-cinnamenyloxazoline, β-, 215.
carbamate, 466.	Methylcoumaroxime, α-, 330.
methylphenyldithiocarbamate,466.	Methylcrotonanilide, β -, derivatives of,
methylphenylthiocarbamate, 466.	1106.
—— morphine carbonate, 638.	Methyldeoxybenzoïnorthocarboxylic
α-naphthalenesulphonate, 1220.	acid, para-, 473.
β -naphthalenesulphonate, 1220.	Methyldeoxystrychnine, 1014.
	• • •

Methyldiphenylformamidine, 707. Methyldipyridyls, 75. Methyldithiobiuret, α-, 703. Methylene iodide, action of, on diethyl malonate, 1304. -action of silver nitrite on, 1415. refractive power of, at different temperatures, TRANS., 296. - iodo-, reaction of, with silver nitrate, 575. Methylenecarbazole, 1466. Methylenecinchonic acid, 1489. Methylenecinchoxinic acid, 1490. Methylenediacetamide, 579. Methylenedibenzamide, 467, 580. Methylenedigallic acid, 856. Methylene-3: 4-dihydroxybenzyl glycol, 47, 310. Methylenedimetanitraniline, 1450. Methylenediditrodibenzamide, 467. Methylenediorthonitraniline, 1450. Methylenediorthotoluylamide, 467. Methylenediparanitraniline, 1450. Methylenediparatoluylamide, 467. Methylenedipyrogallol, 856. Methylenediresorcinol, 856. Methylenediresorcylic acid, 856. Methylenedisalicylic acid, 855. --- condensation of, with resorcylic acid, with gallic acid, and with phenol, 857. Methylenedithioacetamide, 580. Methylenedi-a-toluylamide, 467. Methylenehydroxyquinolinium, 878. Methylenephthalyl, nitro-, 1231. Methylethylacraldehyde, action of sulphuric acid on, 951. Methylethylbenzene, metadiamidopara-, Methylethylbromazolone, 79. Methylethylhydroxyquinoline, 79. Methylethylisoxazole, amido-, 79.
Methylethylpiperidylalkine [2:5-], 1358.
Methylethylpyridylalkine [2:5-], derivatives of, 1358. Methylethylsulphine, preparation of, Methyleugenol, glycol from, 310. Methylfenchylamine, 1239. Methylfumaramic acid, 821. Methylfumarimide, 821. Methylfurfurylthiocarbamide, 43. Methylglutaric acid, β-, 41. Methylglyoxaline, action of ethyl chloracetate on, 1493. Methylglyoximecarboxylic acids, dissociation constants of, 1268. Methylguvacine, 740. Methylhexabydronicotinic acid, 740.

Methylhexylcarbin cyanide, 132.

Methylhexylethylene, β -, 132. Methylhydantoïn, γ-, 828. Methylhydratropic acid, para-, 605. — — metadiamido-, 606. ---- metadinitro-, 606. Methylhydrazimethylenecarboxylicacid, ammonium salt of, 452. Methylhydrindone, ortho-, 1221. - phenylhydrazone, 1221. Methylhydrobergaptic acid, 72. Methylhydrocinnamic acid, ortho-, 1221. - acids, condensation of, to the corresponding methylhydrindones, 1221. Methylhydrocotoïn, action of phos-phoric chloride on, 1314. Methylhydrohydrastinine, bromo-, 223. Methylhydroxy- γ -acetoxime- δ -isonitrosoamidovaleric acid, β -, lactam of, 326. Methylhydroxy-γ-cyanacetobutyronitrile, **β**-, 325. Methylhydroxylamine, 1067. Methylhydroxyphthalanil, α-, 608. Methylhydroxyphthalanilic acid, Methylhydroxypyrimidinecarboxylic acid, 1008. Methylhydroxytoluquinoxaline, 1359. Methylindole, α -, action of methyl iodide on, 614. Methylisobutylthiocarbamide, trical, 702. Methylisoeugenol, glycol from, 311. nitrosite of, 447. Methylisoform-a-naphthalide, 705. Methylisoformoparatoluidide, 708. Methylisoformorthotoluidide, 707. Methylisoglyceric acid, β -, 296. Methylisoglycidic acid, β -, 296. Methylisoxazole, α -, 1073. Methylisoxazole, γ -, 1073. Methyljulolidine, γ₁-, 498. Methyllepidone, dyes obtained from, 498. Methylmalic acid, β -, 589, 963. Methylmalonic acid, thermochemistry of, 1140. Methylmetanitroformanilide, 706. Methylmetanitroisoformanilide, 706. Methyl-μ-metanitrophenyloxazoline, β-, Methylmethenylnaphthaleneamidine, 1496.Methylnaphthalene, α -, chloro-, 494. nitro-, 494. ---- trichloro-, 493. Methylnaphthalene, β-, chloro-, 494. chloro-derivatives of, 493. Methylnaphthalenes, α - and β -, 492. action of chlorine and of nitric acid on, 493. Methylnaplithaloxazine, 70. Methyl-α-naphthindole, 3'-, 1479.

Methylnonylacetylene, 1164. Methylenanthaldoxime, 1436. Methylorthocumaryl alcohol, 169. Methylorthophenylenediamine, 1475. Methyloxymethylenetribromopyrogallol, 311. Methyl-a-oxy-β-methylhydroquinoxaline, meta-, 1359. Methylparaphenylglycoluric acid, 828. Methylparethyltoluene, meta-, 985. Methylpentadecylacetylene, 1163. Methylphenanthridine, ortho- 198. Methylphenanthridine, para-, 197. Methylphenanthroline, 729. Methylphenyldihydroquinazoline, 81. Methylphenyldihydroxyglutaric Methylphenylenethenylamidine, 1475. Methylphenylhydrazone, thionyl-, 1324. Methyl-2'-phenylindole, 1-, 1465. Methyl-2'-phenylindole, 3-, 1466. Methylphenylketodihydroquinazoline, Methylphenylpyrazolone and its derivatives, 1245. Methylphenylpyrazolonesulphonic acid, - chloride, dichloro-, 1246. Methylphenyltetrahydroquinazoline, 81. Methylphthalic acid, 1221. - α-, 607. – anhydride, 1221. Methylphthalide, dichloronitro-, 1231. Methylphthalimide, 1221. $-\alpha$ -, 607. Methylphthalodiamide, a-, 607. Methylpipecolylalkine, 1-, 1245. Methylpiperidine, β -, derivatives of, 629.Methylpropylacetic acid, preparation of, from ethyl acetoacetate and from diethyl malonate, 581. solubility \mathbf{of} salts of, Methylpropylketoxime, action of phosphorie chloride on, 427. Methylprotocotoïn, 63. -action of phosphoric chloride on, 1314.Methyl- α -pyridone, 209. Methyl- γ -pyridone, $\alpha\beta\beta$ -trichloro-, 450. Methyl- γ -pyridonecarboxylic acid, $\alpha\beta\beta$ trichloro-, 450. Methylpyrrodiazole, 636. Methylquinidine, 1250. Methylquinine, preparation of, 222. Methylquinoline, amidochloro-, 728. quinone oximes, 727, 728, 729. Methylquinolines, amido-, 727, 728. derivatives of, 726.

– nitro-, 727, 728.

Methylquinolone, bromo- and nitroderivatives of, 879, 880, 881. Methylsaccharin, 1092. Methylstrychnic acid, 1012. Methylsuccinic acid, thermochemistry of, 1140. Methylsulphoneorthamidobenzamide, Methylsynglyoximecarboxylic acid, 1176.Methylsynketoximepropionic acid, 1202.Methyl-Δ2-tetrahydro-2-hydroxyethylpyridine, 1-, 1244. Methyltetrahydroketoquinoxaline, 887. Methyltetrahydroketotoluquinoxaline, Methyltetrahydronicotinic acid, 740. Methyl- Δ^2 -tetrahydropicoline, 1-, 1243. Methylthiobiuret, α-, 703. Methylthiocarbamide, polymeric, 798. Methylthiocarbimide, compound with aldehyde-ammonia, TRANS., 517. Methylthiocoumarin, α-, 329. Methylthiohydantoïn, 151. Methylthiophen, dibromo- β -, 830. - mercuric chloride, α-, 829. Methylthiophen-α-carboxylic acid, β-, Methylthiophensynaldoxime, 1435. Methyltolualloxazine, 70. Methyltribromothiophens, oxidation of, 302Methyltricarballylic acid, α -, 41. Methyltricarballylic acid, β-, 42. Methyltridecylacetylene, 1163. Methyltrihydroxybenzophenone, 1225. Methyltropidine, α -, 358. Methyltropidine, β-, 359. Methylumbelliferone, derivatives of, Methylundecylacetylene, 1164. Methylxanthone, 1092. Mica, action of water on, 573. Micas, constitution of, 125. Microscopic objects, influence of the composition of the glass of slides and cover glasses on the durability of, 1276. Milarite, 1056. Milk, action of pilocarpine on the excretion of, 365. – analysis, 517. ---- analysis, $_{\mathrm{the}}$ Werner-Schmid method of, 390. cause of the rapid curdling of, during thunderstorms, 1370. estimation of fat in, 549, 550, 1134, 1532. - estimation of fat in the products

from, 391.

Milk, human, analyses of, 517.

— is alcohol eliminated by the? 365.

putrefaction of, 1116.

Milk-solids, extraction of fat from,

Milk-sterilising apparatus, improvements in Soxhlet's, 518.

Mineral springs of Edepsos, 418.

Mineral water. See Water.

Mineralising influence of ammonium sulphate, 1399.

Minerals, determination of the melting point of, 414.

- from the chrome iron ore deposits of Maryland, 1057.

natural classification of, 415.

Mixtures, liquid and gaseous, volumes of, 935.

melting points of, 1139.

Molasses, analysis of, 388.

preparation of raffinose from, 422.

Molecular compounds, behaviour of, on dissolution, 1154.

dissymmetry, 399, 758.
volumes of dissolved substances,

weight, diathermanous power, refractive index, and density of a substance, relation between, 1.

- weights of liquids, as evinced by

their boiling points, 107.

of substances in solution, modification of Beckmann's boiling point, method of determining, TRANS., 989.

Molecules, organic, stereochemical models of, 679.

Molybdenite, analysis of, 657.

Molybdenum, action of nitric acid ion,

electrolytic separation of gold from, 920.

estimation of, 917.

— fluoroxy-compounds of, 784.

- sesquioxide, action of nitric oxide on, 1152.

Molybdic acid, action of hydrogen peroxide on, 944.

 colloïdal solutions of, Trans., 155.

 compounds of sorbitol and perseïtol with, 422.

— estimation of, 241.

Moments of inertia, establishment of fundamental formulæ for the calculation of, 948.

Monchiquite, a rock of the elevolitesyenite class, 1058.

Morphine, hydrogen diaminechromium thiocyanate, 1001.

Morphine-violet, 361.

Mucic acid, action of hydrogen phosphide on, 875.

- lactone, reduction of, 825.

reduction of, 824.

Mucin in myxædema, 1117.

Multirotation, disappearance of the, of sugars in ammoniacal solution, 1419.

Muscle, frog, Nasse's experiments on the excitability of, in salt solutions,

Muscular work, influence of, on the elimination of creatinine, 364.

Mushrooms, cooked, composition of, Trans., 227.

Mustard oil, estimation of, 1035.

Myristic acid, 311.

- action of bromine on, 696.
- presence of, in ox gall, 1114, 1503.

Myristicinaldehyde, 311.

Myristin and its derivatives, 311.

Mytilus edulis, blood of, 648.

Myxœdema, mucin in, 1117.

N.

Napelline, Trans., 391.

Naphthachloroquinaldine, β-. 1488.

Naphthadihydroxyquinoxaline, 70.

Naphthalaldehydic acid, 864. Naphthalene, α- and β-bromo-, action of

bromine on, Proc., 1891, 184. chlorobromonitro-[1:4:2],Trans., 768.

constitution of, 69.

- aβ-diamido-, action of formaldehyde on, 1496.

- dibromonitro- [1:4:2], TRANS., 769.

- homonucleal, tri-derivatives of, TRANS., 765.

- α nitro-, reduction of, 595.

- nitrobromiodo- [2:4:1], Trans.,

Naphthalenedicarboxylic acid [1:2], 1477.

 dioximimide of, 1477. --- anhydride [1 : 2], 1477.

Naphthalenes, dibromo-, isomeric, the sulphochlorides of, Proc., 1891, 182.

Naphthalene-series, products of the reduction of alkylated azo-colours of the, 862.

Napthalenesulphonic acid, 1: 2-amido-,

 $-1:2:2'-\alpha$ -amidochloro-, 1479.

— 1 : 2'-α-chloro-, 1478. — 2 : 2'-chloro-, 1478.

- — 2: 4'-β-chloro-, 1478. - --- 1:3': 4-dichloro-, 344. Naphthalenesulphonic acid, $1:2:2'-\alpha$ nitrochloro-, 1478. Naphthalenesulphonic acids, chloro-, 1477.- dibromo-, preparation of

ethereal salts of, Proc., 1891, 184. Naphthalenesulphonic chloride, α -, 1220. Naphthalenesulphonic chloride, β-, 1220.

Naphthalide, oxy-, 864.

Naphthaquinone-, β-, action of hypochlorous acid on, 494, 857.

· nitro-, action of chlorine on, 1229, 1232.

sulphonic acids of, 196.

Naphthaphenoquinoxazine, 887.

Naphthaquinone- α -sulphonic acid, β -, sodium salt of, 196.

Naphthenes and their derivatives, 1182, $\bar{13}11.$

- and polymethylenes, 1310. Naphthimidine, 983.

Naphthoethylenediamine, β -, 1248.

Naphthoic acid, trichloro-, 493.

Naphthol, α-, 2-amido-, 861.

- 4-amido-, 861.

sulphonic acid from, 721.

— ethyl ether, 4-amido-, 862.

---- 2-nitro-, 861. --- 2'-nitro-, 1229.

Naphthol, β -, amido-, 862.

1'-amido-, 122, 1234. 4'-amido-, 1233.

— benzoyl derivative of, 447.

----- 2'-nitro-, 1229.

---- 4'-nitro-, 1233.

Naphtholearboxylic acid, β -, action of aniline on, 1476.

Naphtholdisazobenzeneorthotoluene, α-,

Naphthols, amido-, homonucleal, 861. — nitro-β-, 1341.

Naphthol-α-sulphonic acid, α-, 194.

– – β-nitroso-, α-, 195. Naphtholsulphonic acid, 1.4-amido-, 721.

----- [1 : 2-], 345. ----- β-amido-α-, 477.

Naphtholsulphonic acid, α-amido-β-,

Naphthol-α-sulphonic acid, β-, calcium salt of, physiological action of,

Naphtholsulphonic acids, amido-, 996.

— nitroso-, 346. Naphtho-xanthones, 1100.

Naphthoylacetamide, 983.

Naphthyl ethyl ether, 1:4-amido-, and its derivatives, 1097.

orthotolylcarbamate, 832.

Naphthylacetylene, α-, and its derivatives, 495.

Naphthylacetylene, β -, and its derivatives, 496.

Naphthylamidobiazolone, α-, 510. Naphthylamidobiazolone, β -, 508.

Naphthylamidosuccinic acid, a-, 860.

Naphthylamidosuccinic acid, β -, 860. Naphthylamidosuccinic dinaphthyl-

amide, 860. Naphthylamidòthiobiazolone, α-, 511.

Naphthylamidothiobiazolone, β -, 508. Naphthylamido-\psi\thiobiazolone, 510.

Naphthylamine, bromo- (m. p. 62°), nonexistence of, Trans., 766.

platinothiocyanates, 287.

Naphthylamine, a., refractive power of, at different temperatures, TRANS., 303.

 β -, 4:1-bromiodo-, Naphthylamine, Trans., 767.

— 1 : 4-chlorobromo-, 768.

— nitration of, 1232.

—— 2 : 4'-nitro-, 1233.

— 2 : 1'-nitro-, 1234.

Naphthylamines, α - and β -, action of, on ethyl bromosuccinate, 860.

Naphthylanilidodithiobiazolone, 511.

Naphthylanilidothiobiazolone, α -, 511. Naphthylanilidothiobiazolone, β -, 508.

Naphthylaspartic acid, α-, 860.

Naphthyldimethylhydroxypyrimidine,

Naphthylene dihydrosulphides, 1471. dithiocyanate, 1471.

Naphthyleneamidinedimethoxybenzenylorthocarboxylic acid, a \beta-,

Naphthylenediamine, 2:1'-, 1234. Naphthylenediamine, 2:4'-, 1233.

Naphthylenedimethoxyphthalamidone, άβ-, 1249.

Naphthylethylene, chlor-α-, 495. Naphthylethylene, chlor-\$-, 495.

Naphthylglycocinenaphthylide, 1341.

Naphthylglycocine-α-naphthylidoacetic acid, a-, 1341.

Naphthylglycocines, derivatives $\bar{1}341.$

Naphthylhydrazone, thionyl-α-, 1324. Naphthylhydroxypyrimidinecarboxylic acid, 1008.

Naphthylidobutyric acid, α-, 1338.

Naphthylidobutyric acid, β -, 1338.

Naphthylidoisobutyric acids, derivatives of, 1342.

Naphthylidopropionic acid, α-, 1337. Naphthylido-α-propionic acid, β-, 1337.

Naphthylimidazole, να-, 1331.

1642 Naphthylimidazole-μ-mercaptan, να-, **1331**. Naphthylimidazolyl-μ-methyl sulphide, να·, 1331. Naphthylmethyl chloride, α-, 494. Naphthylmethylbiazolone, α-, 509. Naphthylmethylbiazolone, β -, 508. Naphthylmethylhydroxypyrimidine, Naphthylmethylsulphone, β -, 623. Naphthylmethyl-ψ-thiobiazolone, α-, Naphthylmethyl- ψ -thiobiazolone, β -, Naphthylmethylthiohydantoïn, α-, 150. Naphthylphenylacetic acid, 1094. Naphthylphenylacetonitrile, 1094. Naphthylphenylbiazolone, a-, 509. Naphthylphenylhydroxypyrimidine, 1009. Naphthylphenylsemithiocarbazide, α-, 511; Trans., 1019. Naphthylphenylsemithiocarbazide, β-, Trans., 1020. Naphthylphenyl- ψ -thiobiazolone, α -, 510. Naphthylquinoline, 1107. Naphthylthiocarbamic acids, salts of, Naphthylthiocarbamide, α-, 1331. Naphthylthiocarbizine, α-, 510. Naphthylthiosemicarbazide, α-, 510. Narcotine, reaction of, 756. Nascent action, 257. Natrolite from Magnet Cove, Arkansas, - from Monte Baldo, 690. Neodymium oxide, emission spectrum Nerves, heat production in, during excitation, 365. Neurine, 219. - action of hydriodic and hydrobromic acids on, 808. derivatives of, 806, 905. Newtonite, 22. Nickel, action of nitric acid on. 1278.- action of nitric oxide on, 1152. —— ammonium sulphate, 1283. --- atomic weight of, 1158. --- carbonyl, oxidation of, 279. - physiological action of, 365. — detection of, 1525. ---- electrolytic separation of cadmium from, 920.

----- fluoroxyhypovanadate, 787.

— occlusion of hydrogen by, 567.

---- nitrate, basic, 1157.

heating, 1159.

Nickel potassium fluoride, 781. reactions, 1132. - salts, action of alkaline polysulphides on, 537. - separation of iron from, 103. - separation of manganese from, 240. — sulphate, anhydrous, 1283. - crystallised, 941. Nicotenylamidoxime, 206. – benzyl ether, 208. Nicotenylazoximebenzenyl, 207. Nicotenylazoximepropenyl-ω-carboxylic acid, 207. Nicotenylazosulphimecarbanilide, 208. Nicotenylphenyluramidoxime, 208. Nicotiana tabacum, alkaloïds of, 232. Nicotine, 1010, 1497. action of bromine on, 1497. action of silver acetate on, 1104. Nicotinic acid, 3'-bromo-, 876. Nipecotinic acid and its derivatives, Nitramine of the quinoline group, attempted synthesis of, 725. Nitrates, action of the copper-zinc couple on, in acid solution, 1518. — basic, 1157. - decomposition of, by water, 1272. ---- estimation of, in water, 243. --- estimation of nitrogen in, 527, 528, 1517. Nitrate-reducing ferment in Nitric acid, action of nascent hydrogen and nascent oxygen on, 680. - — action of, on metals, 1278, 1402. - — and lead, chemical changes between, 410. --- colour of, 113. - gasometric estimation of, 1375. — manufacture of, 941.
— reduction of, to ammonia by the galvanic current, 403. — separation of, from mercury and phosphoric and arsenic acids, 530. — tables revised, 13. Nitric oxide, absorption coefficient of, in alcohol, 1044. - action of, on metallic oxides, 1151, 1271. — — action of, on metals, 1151. — — action of potash on, 940. ----- and oxygen, reaction between, 940. — behaviour of, at high temperatures, 940. -- oxide, behaviour of, on strong - - estimation of free oxygen by

means of, 97.

Nitric oxide, preparation of, 939.

Nitric peroxide, action of, on metals and metallic oxides, 1390.

—————liquid, dissociation of, Trans.,

Nitrification, comparative, of humus and undecomposed organic matter, 906.

—— in organic media of acid reaction, 906.

influence of clay and organic nitrogen on, in fallow soils, 656.

loss of nitrogen during, 374.
 of organic nitrogen, 367.

Nitriles, action of sulphuric anhydride on, 713.

- additive products of, with hydrogen iodide, 1448.

---- aromatic, 344.

— formation of, 1094.

— dimolecular, 450.

- ketonic, action of hydroxylamine

- polymerisation of, 576.

— refractive powers of, 757.

—— unsaturated, synthesis of, 1340.

Nitrites, action of the copper-iron couple on, in acid solution, 1518.

- in water, influence of temperature on Griess' reaction for, 657.

Nitro-compounds, coloured, constitution of, Proc., 1892, 101.

---- fatty, 575.

— first product of the reduction of, 291, 594, 1067.

— first product of the reduction of, with stannous chloride, 594, 1067.

Nitrogen, absorption coefficient of, in alcohol, 1043.

fixation of, by arable soils, 522.

Boyer's method of estimating, 1517.

—— compounds, stereochemical isomerism of, 338, 598.

— stereoisomeric, dissociation constants of, 1268.

- direct combination of, with the alkaline earth metals, 566.

--- dissolved in blood, 1257.

--- estimation of, 237, 751, 1125.

estimation of, in nitrates, 527, 528, 1517.

—— estimation of, in organic substances, 1516.

- excretion of, in kidney diseases, 743.

Nitrogen, excretion of, in urine, 1503.

— for plants, rain as a source of, 233. — free, assimilation of, by plants, 367, 370, 378, 523.

fixation of, by leguminous plants, 369.

-- fixation of, by plants, 1021.

fixation of, during vegetation, 1508.

-— influence of hot baths on the excretion of, from the human system, 1503.

— influence of water and sodium chloride on the excretion of, 904.

—— loss of, in the decomposition of nitrogenous matters in the soil, 374.

of leguminous crops, sources of the, 367.

— organic, estimation of, 527.

—— mitrification of, 367.

---- question, 374.

rings containing, nomenclature of, 312, 875.

— solubility of, in water, 108, 271. Nitrogen-free extract, constituents of,

Nitro-group, displacement of the, by chlorine or bromine, 305.

— first reduction products of, 291, 594, 1067.

Nitro-metals, 1390.

Nitrosilicic acid, existence of, 684.

Nitrosoazo-compounds, constitution of, 1321, 1453.

Nitrosulphonic acids, preparation of, 475.

Nitrous acid, detection of, 1124.

---- estimation of, 751, 1029.

Nitrous oxide, absorption coefficient of, in water and in alcohol, 1044.

Nomenclature, international system of, Proc., 1892, 127.

— of cycloïds, Proc., 1892, 127.

— of rings containing two carbon and three nitrogen atoms, 889.

of stereoisomeric nitrogen compounds and of rings containing nitrogen, 312, 875.

Nonenylamidoxime, 132.

Nononaphthene, action of nitric acid on, 443.

---- amido-, 443.

---- ketonic compound from, 443.

—- nitro-, 443.

Nonylamine, 132.

action of nitrous acid on, 132.

Nonylcarbamide, 132.

Nonyldithiocarbamic acid, 132.

Norhemipinic acid, meta-, 180.

Nucleïc acid and guanine, supposed compound of, 1501.

Nucleïn, 224, 1501.

- formation of uric acid from, 646. Nutrition, influence of, on the assimila-

tion of free nitrogen by plants, 371. - influence of, on the composition of the blood ash, 225.

-- of green plant cells with formaldehyde, 1259.

0.

Oat, proteïds of the, 1120.

Occlusion of hydrogen by palladium: lecture experiment, 563.

Octahedrite, 1055.

Octopus vulgaris, blood of, 648.

Octyl acetate, secondary, 1162.

iodide, refractive power of, at different temperatures, Trans., 295.

Enanthaldehyde, action of zinc and ethyl chloracetate on, 1300.

condensation of, with aniline, 1194.

Œnanthaldoximes, 1436.

Enanthantialdoxime, 1436.

Œnocarpol, 874.

Oil, essential, of Angostura bark, 641.

- of Licari kanali, 1236.

---- kuromoji, 1480.

---- lard, iodine number of, by Hübl's method, 664.

--- of ants, composition of, 948.

—— of bergamot, 349, 868, 1235. --- stearoptene of, 71.

---- of cassia, estimation of cinnamaldehyde in, 924.

— of cinnamon, 1509.

—— of cloves, valuation of, 250.

— of laurel, 722.

— of lavender, 868, 1235, 1347.

—— of lime seed, 92.

—— of mustard, estimation of, 1035.

- of peppermint, Russian, 723.

- of petitgrain, 868.

- of roses, German and Turkish, 203,

- sesame, detection of, in olive oil, 1133.volatile, from Aristolochia reticu-

lata, 70. Oils and fats, revision of constants em-

ployed in the analysis of, 547.

— essential, 1347.

- ethereal, oxygen compounds of,

- fat, absorption and digestion of, by plants, 1118.

- fatty and mineral, detection of rosin oil in, 548.

 lubricating, rapid determination of the composition of, 665.

Oils, mineral, heavy, determination of the flashing point of, 542.

- of lemon and bergamot, crystalline products from, 349.

- vegetable, detection of, in lard, 1133.

Olefines, action of fatty acids on, 1162.

Oleïc and elaïdic acids, stereoisomerism of, 812.

Olive oil, detection of sesame oil in, 1133.

Onions, Spanish, cooked, composition of, TRANS., 227.

Ononis arvensis, composition of, 522. Oölitic iron ore of Lorrain, microscopic structure of, 791.

Opianic acid, 179.

- - action of acetone on, 179. ---- action of acetophenone on,

179.

— bromo-, 1209. — oxime of, 180.

---- anhydride, oxime of, heat developed in the isomeric change of the, 459.

—— hydrazobenzene, brom-. 1210.

- methylphenylhydrazone,

- phenylhydrazide, brom-, 1210. Opianoximic anhydride, brom-, 1210.

Opium, assay of, 926.

Optical chemistry, application of Ketteler's formulæ to, 253.

Optically active substances, behaviour of, in mixtures of two solvents, 1137.

Oranges, Californian, analyses of, 1511. Orcinol, compound of, with phenylhydrazine, 49.

Organic compounds, magnetism of, 672. matters in the atmosphere, estimation of, 542.

- substances, estimation of nitrogen in, 1515, 1516.

Organism, fœtal, iron in the, 1502.

- formation of glucose and lactic acid in, 517, 1113.

--- formation of sugar in the, when oxygen is deficient, 362.

- living, action of azoimide on, 90. Organosols, 775.

Orobus niger, composition of, 522.

Orpiment, analysis of, 657.

 from the Yellowstone National Park, 283.

Oscine, 1498.

Osmium, electrolytic separation of gold, of cadmium, of silver, and of mercury from, 920.

Osmosis, absorption without, 646.

Osmotic pressure and electrolytic dissociation, theories of, 1143.

 — measurement of, 556. - --- theory of, 676, 765.

- Ox gall, presence of myristic acid in, 1114, 1503.
- Oxalates, absence of, in young leaves, 651.
- Oxalic acid, formation and physiological significance of, in fungi, 230.
- --- chloride, 588.
- ---- diphenylhydrazide, 981.
- Oxal-β-naphthalide, dinitro-, Trans., 466.
- Oxalorthotoluidide, dinitro-, Trans., 463.
 - --- tetranitro-, Trans., 464.
- Oxalparatoluidide, tetranitro-, Trans., 465.
- Oxalyl-\beta-naphthylhydrazine, 509.
- Oxalylorthamido-a-naplithyl mercaptan,
- Oxalylorthamidophenyl mercaptan,
- Oxamethanetolyloxamide, 603.
- Oxamethanetolylurethane, 601.
- Oxamidotolylurethane, 601.
- Oxanilie acid, dinitro-, TRANS., 468.
- mitro-, Trans., 468. trinitro-, Trans., 469.
- Oxanilide, action of nitric acid on,
- Trans., 458.

 and its homologues, preparation of, Trans., 459.
- hexanitro-, Trans., 462.
- hydrolysis of, Trans., 462.
- tetranitro-, Trans., 460.
- hydrolysis of, Trans., 461. Oxazine-dyes, 887.
- Oxazole, 313.
- Oxazolines, 213.
- formation of, 1331.
- Oxetone, 813.
- Oxetonedicarboxylic acid, 813.
- Oxidation, physiological, 1018.
- spontaneous, of humic acid and vegetable soil, 655.
- Oxides, metallic, action of boron on, 1154.
- action of nitric oxide on, 1151, 1271.
- --- action of nitric peroxide on, 1390.
- Oximes, 1080.
 - action of, on diazo-compounds, 163, 1079.
- and the so-called stereochemistry, 50.
- —— isomeric, 1083.
- --- isomerism of, 291.
- relations between the constitution, configuration, and chemical behaviour of, 1175.
- Oximidoacetic acid, 699.
- Oximido-acids, dissociation constants of, 1268.

- Oxole, 313.
- Oxyacanthine, 641.
- Oxyacetoindigotin, 991.
- Oxyamidosulphonates, action of alkali on, Trans., 988.
- Oxy-a-amyrin, 290.
- ---- acetate, 290.
- Oxyazo-compounds, 974.
- Oxycellulose, 827.
- Oxychrysanthemine, 85.
- Oxydehydracetic acid, 585.
- Oxygen, aldehydic and ketonic, estimation of, 546, 1530.
- and carbonic oxide, influence of steam and other gases on the combustion of, 274.
- and chlorine, reaction of, with hydrogen, 1147.
- and hydrogen, admixed, slow combustion of, 938.
 - correlation of, 1270.
- and nitric oxide, reaction between, 940.
- --- atomic weight of, 1388.
- combination of hæmoglobin with, 1369.
- —— dissolved in water, estimation of, 98; Trans., 310.
- free, estimation of, by means of nitric oxide, 97.
- influence of, on alcoholic fermentation, TRANS., 339.
 - —— influence of, on the separation of carbonic anhydride in the lungs, 1369.
 - solubility of, in water, 108, 271.
- Oxyhæmoglobin crystals, oxygen in, 1017.
- formation of, from hæmatin and a proteïd, 1017.
 solutions of, Trans., 158.
- Oxy-hydrogen gas, absorption of, by soil, 377.
- ---- action of light on, 939.
- Oxymercuric hydrogen imidosulphonate, Trans., 977.
- Oxymethylenemethoxybutenylbenzene,
- Oxymethylquinolines, nitroso-, 727, 728, 729.

Ρ.

Pæonol, 58.

phenylhydrazone, 59.

Pæonoloxime, 59.

Pa'inurus vulgaris, blood of, 648.

Palladious oxide, 572.

Palladium, absorption of oxygen by,

— action of nitric acid on, 1152.

— atomic weight of, Trans., 745.

—— direct oxidation of, 572.

--- lowering of the freezing point of bismuth by, Trans., 894.

- lowering of the freezing point of cadmium by, Trans., 900.

- lowering of the freezing point of lead by, TRANS., 906.

occlusion of hydrogen by, 567.occlusion of hydrogen by: lecture experiment, 563.

- nitrogen compounds, 1284.

Pallasites, the prehistoric and Kiowa Co., 1059.

Palmitic acid, action of bromine on,

Pancreas extract, presence of pentamethylenediamine in, 1368.

Paper, drawing, the acid action of, Proc., **1892**, 19, 34.

- wall-, estimation of arsenic in, 382.

Paracoto bark, constituents of, 62,

Paraffin-derivatives, boiling points of,

Paraffins, normal, boiling point curves for, 947.

Paraldehyde, condensation of, with chloral, 694.

Paramelaconite, 415.

Paranthracene, 347.

Parapectic acid, 291.

Parapropaldehyde, 1300.

Parsnips, cooked, composition of, TRANS., 227.

Pea-nut, 1122.

Peas, assimilation of free nitrogen by, 371, 372, 374, 378.

- cooked, composition of, Trans., 227.

Pectic acid, so-called artificial, from firwood, 827.

Pectin-substances, 291.

Pedetic motion in relation to colloïdal solutions, Proc., 1892, 17.

Penicillium glaucum action of, on fumarates and maleates, 820.

--- resolution of inactive lactic acid by, 297.

Pentabenzoylglucosamine, 134.

Pentacetylxylitol, 29.

Pentadecylacridine, 343.

Pentahydroxyaurindicarboxylic 1469.

Pentahydroxypimelic acid, 1169.

Pentamethylbenzene, chloro-, 968.

Pentamethyldihydroquinoline, 615. Pentamethylene glycol and its oxides,

1292.Pentamethylenediamine, 1368.

- hydrogen diaminechromium thiocyanate, 1001.

· platinothiocyanate, 287.

Pentamethylenedicarboxylic acid, \$\beta\$-, dissociation constant of, TRANS.,

Pentamethylenedicarboxylic acid [1:2], melting point of, 1040.

- thermochemistry of, 1041.

Pentamethylethyltrimethylenetrisulphone, 593.

Pentamethyltetrahydroquinoline, 615.

Pentane flame, experiments on, TRANS.,

Penterythritol, 127.

thermochemistry of, 764.

Pentethylphioroglucinol, bisecondary, oxidation of, 1188.

Pentonic acid, new, 437.

Pentosans of woody vegetable fibre, 1420.

Pentose carbohydrates, digestibility of,

Pentoses, detection of, in vegetable products, 250.

estimation of 247, 388.

---- physiological action of, 1506.

Pentoxazolines, 213. Peppermint oil, Russian, 723.

Peptone, decomposition of, human body, 904.

salts from glutin, 895, 1016.

Peptones, analysis of, 1535. - constitution of, 1499.

 estimation of, in stomach contents, 1136.

formation of sugar from, in blood, 1502.

- in the blood and organs of leucæmic patients, 519.

molecular weights of, 1501.

--- salicylsulphonic acid as a test for, 552.

- volumetric estimation of, in urine, 1264.

Peridotite in Central New York, 1057.

Periodic relations of the elements.

Permanganate solutions, stability of

Permanganates and hydrogen peroxide, reaction between, 277.

Permeability of precipitated membranes, 1383. Permolybdates, 1160. Permolybdic acid, 1283. - heat of formation of, 1383. Perruthenates, action of heat on, 282. Perseitol, compounds of, with molybdic acid, 422. - hydrocarbon derived from, 1065. - rotatory power of compounds of, with sodium hydrogen and ammonium hydrogen molybdate, 800. thermochemistry of, 764. Persulphates, 12. Persulphuric acid and its salts, 931. Petalite from Maine, 1411. Petitgrain, oil of, 868. Petroleum, pyridine-like bases in, 1357. Phanerogams, assimilation of free nitrogen by, 370. Phenacetin, detection of, in urine, 665. - orthonitro-, 160. Phenacetyl- $\alpha\beta$ -diphenylacrylamide, β -, Phenacetyl-a\beta-diphenylacrylethylamide, β-, 484. Phenanthrene and picric acid, solubility relations of the compound of, 1384. Phenanthridine, 196. --- methohydroxide, 197. Phenetoïl, dibromonitro-, 1182. paramido-, oxidation products of, 158.- sulphonic acids derived from, Proc., 1892, 90. Phenetidine, para-, oxidation products of, 158. - orthonitro-, 160. Phenol, action of phospham on, 1311. - alkalimetric estimation of, 543. depression of the melting point by, 556. – dinitrosonitro-, 594. --- diorthochloroparabromo-, Trans., - metabromonitro-, reduction 704. — metachlorothio-, 306. — orthochlorothio- 308. — parachlorothio-, 308. thermal function of, 1042. — thermochemistry of, 764, 1042. Phenoldisazobenzene, constitution of, Phenoldisazo-orthobenzeneparatoluene, Phenoldisazoparabenzeneorthotoluene,

Phenoldisazotoluene, 976.

Phenolic acids, instability of carboxyl in,

Phenolphthaleïn ethyl ether, 1096.

Phenolphthalin ethyl ether, 1319. Phenols, action of chlorine on, 1186. - action of methylchloroform and ethylchloroform on alkaline solutions action of phenylhydrazine on, 49. - amido-, condensation products of, 1451. and unsaturated hydrocarbons, condensation of, 446, 1443. condensation of, with isoamylene and cinnamene, 447. - estimation of, in human urine, 544. isomeric change in the synthesis of, 44. · polyhydric, action of dinitrochlorobenzene on, 210. thermochemistry of, 763. Phenonaphthacridone, 1477. Phenonaphtho-xanthone, 1099. Phenoparatolyldihydrotriazine, β -, 734. Phenophenyldihydrotriazine, γ-, 734. Phenoquinolino-xanthone, 1099. Phenoquinoxazine, 887. Phenoquinoxazone, 887. Phenotriazines, synthesis of, 734. Phenoxyamylamine, ε-, 717. Phenoxybutylamine, γ , 131. Phenoxybutyronitrile, γ -, 131. Phenoxypropylmalonic acid, 717. Phenoxyvaleric acid, γ-, 717. Phenoxyvaleronitrile, γ-, 717.
 Phenyl bromide, refractive power of, at different temperatures, Trans., 299. chloride, refractive power of, at different temperatures, Trans.. 298. - dithiocarbonate, chloro-, 306, 307. parachloro-, 307. — dithiocarbonates, 306. — iodide, refractive power of, at dif-ferent temperatures, Trans., 300. isocyanide, preparation and pro-perties of, 1438. α-naphthyl ketone, sodium derivative of, 170. — orthacetate, **3**08. - orthomethoxytolyl ketone, 446. ——— phenyl-β-naphthylcarbamate, 166. sodium sulphite, 970, 1076. - action of iodoform on, 1076. – thiodi-β-naphthylcarbamate, 166. – thiodiphenylcarbamate, 164. — xanthate, chloro-, 308. Phenylacetaldoxime, 1174. Phenylacetic acid, preparation of, 344. diphenylhydrazide, 981. Phenylacetometachloranilide, 1465.

Phenylacetoparatoluidide, 1465. Phenylacetorthotoluidide, 1465.

Phenyl-a-acetoxycrotonic acid, γ -, 472.

Phenylacetylene, silver derivative of, 831.

Phenylacridine, ammonium bases of, 1095.

diamido-, preparation of, 1095.
Phenylacridinemethylium ethoxide,
881.

— hydroxide, 881.

Phenyl-\beta-alanine, 1342.

Phenylamidoacetic acid, derivatives of, 467.

---- anhydride, 468.

Phenylamidomesoxalic chloride, 1439. Phenylamidophenylinduline, 342.

----- amido-, 342.

Phenylamines, substituted, action of silicon tetrachloride on, Trans., 453.

Phenylamphiglyoxime, anti-, 321. Phenylamphiglyoximecarboxylic aci

1177. Phenylangelicalactone, 987.

Phenyl-a-anilidocrotononitrile, 1194. Phenylanthracene, preparation of, 722.

Phenylanthranilic acid, 1086. Phenylantiglyoxime, 321.

Phenylazimidobenzene, 889.

—— amido-, 1322.

---- tetranitro-, 1454.

Phenylazorthohydroxymethylquinoline, meta-, 506.

Phenylazoxazole, 322.

Phenylazoxazolecarboxylic acid, 1178. Phenylazoximidobenzene, tetranitro-, 1454.

Phenylbenzenylamidine, 51.

Plienylbenzenylnaphthylenediamine,

Phenylbenzimidoethyl ether, 52.

Phenylbenzophenone, para-, derivatives of, 186.

Phenylbenzophenoneoxime, para-, 186. Phenylbenzophenonephenylhydrazone, para-, 186.

Phenylbenzoylbromomethylpyrazolone [1: 2:4:3-], 146.

Phenylbenzoyldimethylpyrazolone, 146. Phenylbenzoylmethylpyrazolone,

[1:2:3-], 146.

Phenylbenzylformamidine, 708.

Phenyl-4-benzylidene-3: 5-pyrazolidone, 1-, 1005.

Phenylbenzylparatolylcarbamide, 1083. Phenylbenzylthiourea, unsymmetrical, Proc., 1892, 97.

Phenylbromobutyrolactone, 987.

Phenylbromodihydroxybutyrolactone, 1447.

Phenyl-γ-bromo-α-hydroxybutyric acid, γ-, 471.

Phenylbromohydroxycrotonic acid, 1447.

Phenylbromotrimethylene- ψ -thiourea, n-, Trans., 550.

Phenyl- γ -bromovaleric acid, 988. Phenylbromovalerolactone, 987.

Phenylcarbamide and its derivatives, 480.

—— bromo-derivatives of, 467. Phenylchloracetonitrile, 1088.

Phenylcinnamonitrile, 344.

Plienylcroton- α -lactone, γ -, 472.

Phenyldibenzoylmethylpyrazolone [1:2:4:3-], 146.

Phenyl-2: 4-dibenzoyl-3: 5-pyrazolidone, 1-, 1005.

Plienyldibenzylcarbamide, 1083.

Phenyldibromobutyric acid, decomposition of, 987.

Phenyldibromohydroxybutyronitrile, 1447.

Phenyldibromovaleric acid, decomposition of, 987.

Phenyldifurylnaphthodiliydroquinoxaline, 1475.

Phenyldihydroxybutyric acid, 986. Phenyl-αγ-dihydroxybutyrolactone, γ-,

472.

Phenyldihydroxyvaleric acid, 986. Phenyldimethylisopyrazolone, 635.

Phenyldimethylpyrazolidone, 731.

Phenyldimethylthiohydantoin, 150.

Plienyl-β-dimethyl-μ-thiomethylimidazole, ν-, 153.

Phenyldimethylthiourea, Trans., 539. Phenyldiorthocresolmethane, metanitro-, 621.

Phenyldithiobiuret, a-, 704, 844.
Phenyldithiocarbamic thioanhydride,
55

Phenyldithiodimethylketuret, a-, 844. Phenylene hydrogen antimonite, ortho-,

---- orthotolylcarbamate, meta-, 832. ---- oxide, 1187.

Phenylenediamine, meta-, preservation of solutions of, and its use as a reagent, 1124.

Phenylenediamine, ortho-, action of formaldehyde on, 1496.

Phenylenediphenylpropionic acid, 1228. Phenylenehydroxylamine, dinitro-, 594. Phenylethenylamidoximebenzenesulph-

one, 461.

Phenylethenyldiamidoacetone, 952. Phenylethyltriazolecarboxylic acid, 637.

Phenylfurazan, 322.

Phenylfurfurylcarbamide, 43.

Phenylfurfurylthiocarbamide, 43.

Phenylglyceric acid, 986.

Phenylglycocine, derivatives of, 1333.

Phenylglycollic acid, action of nitric acid on, 607.

--- orthoparadinitro-, 1333.

Phenylglyoximes, 321. Phenylguanazole, 356. Phenylguanidine picrate, 950. Phenylgulosazone, 1-, 823. parabromo, 823. Phenylhexyltriazolecarboxylic acid. Phenylhippuric acid, 468. Phenylhydantoin, γ ., 828. Phenylhydrazidobutyramide, a., 1192. Phenylhydrazidopropionic acid, a-, 1196, nitrile, 1195. Phenylhydrazimethylenecarboxylic acid, ammonium salt of, 453. Phenylhydrazine acetate, 981. action of arsenic chloride on, 1326.- action of boron chloride on, 1326. --- action of copper sulphate on hot acid solutions of, 842. action of cyanogen chloride on, — action of, on carbamide, 1323. — action of orthonitrobenzyl chloride on, 1455. - action of phosphorus trichloride on, 1324. action of silicon chloride on, 1326.— carbonyl chloroplatinite, 353. - derivatives of, 453. — hydrogen diaminechromium thiocyanate, 1001. — inorganic derivatives of, 1324. — metachloro-, and its derivatives, - metallic derivatives of, 1454. oxidation of, with Fehling's solution, 1322. -- parahydroxyalkyl derivatives of, 1198. paralkyloxy-derivatives of, 1080. ---- parathio-, 1326. - paratolylphosphenite, 1325. --- phosphenite, 1325. — phosphite, 1325. - thionylthio-, 1326. Phenylhydrazinebutyric acid, asymmetrical, 635. Phenylhydrazolepidine, 2-, 1488. Phenylhydrindone, 1220, 1228. Phenylhydrocinnamic acid, a-, 1211. Phenylhydroxyacetonitrile, acetyl derivative of, 1088. Phenylhydroxybenzenylnaphthylenediamine, 1472.

Phenyl-\gamma-hydroxyvaleric acid, 988. Phenylhydroxyvalerolactone, 986. Phenylimidocarbonyl chloride, 1433. Phenylimidodiacetic anhydride, 1334. Phenylimidoformic chloride hydrochloride, 1440. Phenylimidopyruvic chloride, 1440. Phenylindole, 2'-, 1465. - chloro-2'-, 1466. Phenylinduline, action of acetic acid on, 34ĺ. amido-, action of sulphuric acid on, 341 Phenylisobromobutyrolactone, 987. Phenylisocrotonic acid, 850. - oxidation of, 986. Phenylisodihydroxybutyric acid, 1448. - salts of, 987. Phenylisohydroxybutyrolactone, 987. Phenyl-4-isonitroso-3: 5-pyrazolidone, 1-, 1005. Phenylisopropylbenzenylnaphthylenediamine, 1473. Phenyl-4-isopropylene-3: 5-pyrazolidone, 1-, 1005. Phenylisopropyltriazolecarboxylic acid, Phenylisoxazolone, 1177. Phenylketodihydroquinazoline, 81. Phenylketodihydroquinazolinecarboxylic acid, 81. Phenylketohydroxybutyric acid, 1448. Phenyllevulinic acid, 988. Phenyllupetidinedicarboxylic 1487.Phenyllutidinedicarboxylic acid, 1486. Phenylmetachlorazobenzene, nitro- and nitronitroso-derivatives of, 454. Phenylmetachlorazoxybenzene, nitronitroso-, 455. Phenylmetachlorophenylhydrazine, orthoparadinitro-, 454. Phenylmetahydroxytolylethane, 446. Phenylmetamethoxytolylethane, 446. Phenylmetanitrobenzenylamidine, 52. Phenylmetanitrobenzenylnaphthalenediamine, 1473. Phenylmetanitrobenzimido ether, 52. Phenylmethaneazobenzene, orthonitro. Phenyl- α -methoxy- β -methyl- μ -thiomethylimidazole, v-, 152. Phenylmethylbenzoylpyrazolone [1:3:4-], 146Phenylmethylenehydrazine, 456. Phenylmethylethylpyrazole platinochloride [1 : 4 : 5-], 885. Phenylmethylhydroisopyrazolone, 635. Phenylmethylisopyrazolone, 635. Phenylmethylmethylenehydrazine, 457. Phenylmethylphenylazimethylene, 457. 5 s

Phenylhydroxyphenylethane, 446.

Phenylhydroxybutyrolactone, 986.

Phenyl-a-hydroxycrotonic acid, 471. Phenylhydroxyformamidine, 708.

Phenyl-α-hydroxybutyro-γ-lactone, γ-,

1650 Phenylmethylpyrazolidone, 731. Phenylmethylpyrazolone, constitution of, 634. - mono-, di-, and tri-bromo-, 731. – nitro-, 731. Phenylmethylthiohydantoin, 150. Phenylnaphthostilborosindone, 1247. Phenylnaphthylenediamine, action of benzaldehyde on, 1472. - action of salicylaldehyde on, 1472. Phenyl-a-naphthylformamidine, 706. Phenyl-a-naphthylglycollic acid, 170. Phenyl-B-naphthylsemithiocarbazide, Trans., $1\overline{0}20$. Phenyl-\(\beta\)-naphthylthiocarbamide, 984. Phenyl-\(\beta\)-naphthylthiosemicarbazide, 508. Phenylnonylcarbamide, 132. Phenylnonylthiocarbamide, 133. Phenylorthohydroxytolylethane, 446. Phenylorthomethoxytolylethane, 416. Phenylorthonitrobenzenylnaphthylenediamine, 1473. Phenyl-3: 6-orthopiperazone, 1-, 1494. Phenyloxazoline, μ -metanitro-, 213. — preparation of, 1832. Phenyloximidoacetonitrile, 322. Phenylparaditolylcarbamide, 1083. Phenylparanitrobenzenylnaphthalenediamine, 1473. Phenylparaphenylglycoluric acid, Phenylparatolylthiosemicarbazide, TRANS., 1014. Phenylpentoxazoline, μ -, 212. · μ-metanitro-, 214. Phenylpentriazole, meso-, 889. Phenylphthalimide, preparation 1204. Phenylpiperazine, paranitro-, 210. Phenylpropiolic acid dichloride, 1464. formation of allocinnamic acid from, 848. Phenylpropionic acid, formation of a hydrocarbon, C₁₈H₁₂, from, Proc., 1892, 107. Phenylpropylamine, 845. Phenylpropyltriazolecarboxylic acid, 638. Phenylpyrazolidine, 355. Phenyl-3: 5-pyrazolidone, 1-, 1004. Phenyl-3: 5-pyrazolidone-4 azobenzene, 1-, 1005. Phenylpyrazolone, 799. Phenylpyrazolonecarboxylic acid [1:5:4], Trans., 797, 799. Phenylpyridone, αββ-trichloro-γ-, 448.

Phenyl-y-pyridonecarboxylic acid,

acid,

αββ trichloro-, 448. Phenyipyrrodiazolecarboxylic

1:3-, synthesis of, 636.

Phenylquinoline, a-, derivatives of, 1003.Phenylsantoninmethane, metanitro-. 622.Phenylsemicarbazide, 1323. Phenylsuccinamidine, 702. Phenylsuccinimide, preparation of, 1204. Phenylsulphone - δ - amidovaleric acid, Phenylsulphonehydroxypropionic acid, parachloro-, 1091. Phenylsulphonepropionic acid, a-amido-, 1091.Phenylsulphonetetrahydroquinoline, Phenylsynglyoxime, 322. Phenylsynglyoximecarboxylic acid, 1177.Phenyltetrahydroketoquinazoline, 1495. Phenyltetrahydroketoquinoxaline, 886. Phenyltetrahydroketotoluquinoxaline, 886. Phenyl-\(\Delta^2\)-tetrahydro-2-methylpyridine, 1-, 1244. Phenyl-\(\Delta^2\)-tetrahydropicoline, 1-, 1244. Phenyltetrahydrothioquinazoline, 1495. Phenyltetrazolecarboxylic acid, amido-, 1009. - nitro-, 1009. Phenyltetrazolecarboxylthiamide, 638. Phenyltetrose, 1447. Phenylthiocarbamide, 465. Phenylthiocarbamides, thio-, melting points of, 324. Phenylthiocarbamineisobutylcyamide, 703. Phenylthiocarbimide, action methylaniline on, TRANS., 538. and chloral ammonia, TRANS., 529. compound of, with aldehyde ammonia, action of silver nitrate on the, TRANS., 518. Phenylthiocarbimide - aldehyde - ammonia, TRANS., 521. Phenylthiourethane, 600. Phenyltoluene, meta., 851. Phenyltriazolecarboxylic acid, amido-, nitro-, 735. Phenyltrihydroxybutyric acid, 1447. Phenyltrihydroxybutyrolactone, 1447. Phenyltrimethylenecarboxylic acids, 849 Phenyltrimethylene-2:3 - dicarboxylic acid, \(\Gal\)-, 849. Phenyltrimethylene-2:2:3-tricarboxylic acid, Га1∙, 849. Phenyltrimethylmethane, paramido-, Phenyltrimethylphenylacetonitrile, 1094.

Phenyltri-\(\beta\)-naphthylcarbamide, 167. Phosphorus, estimation of, in iron, stee'. Phenylumbelliferone, reduction of, 1228.Phenyluranilidacetic acid, 468. Phenylurazole, preparation of, 966. Phenylvalerolactone, 988. Phloroglucinol, presence and function of, in plants, 1120. Phænicrocoïte, synthesis of, 792. Pholidolite, 1408. Phosphamide, 1152. Phosphates, analysis of, 99, 912. - estimation of, 1125. - estimation of calcium in, 534. - estimation of iron and aluminium ın, 536. - natural, fluorine in, 1055. Phosphenylbenzylphenylhydrazone, Phosphenylparatolylhydrazone, 1325. Phosphenylphenylhydrazine, 1325. Phosphines, tertiary, action of benzal chloride on, 984. Phosphinobenzene, 1084. Phosphino-compounds, 1084. Phosphino- ψ -cumene, 1085. Phosphinoparatoluene, 1085. Phosphonium bromide, dissociation of, Phosphopalladious compounds, 1285. Phosphoric acid, assimilation of, by crops from the soil, 233. - basicity of, 394.
- estimation of, by the molybdate process, 1519. - - estimation of, in fertilisers containing cotton seed meal, 1029. - estimation of, in manures, 1125. estimation of, in slags, 382.
estimation of, in soil, 750.
estimation of iron and aluminium in the presence of, 755. — — in soil, 750. - --- in urine, 1115. - reverted, estimation of, 1126.
separation of, from mercury, sodium, chlorine, and from nitric acid, 530. volumetric estimation of, Phosphorous acid, dihydrazide of, 1325. Phosphorus, allotropic states of, 405. analysis of a slag from the manufacture of, in electrical furnaces, 1401. - and sulphur, compounds of, 14. --- bromonitride, 1272. - chloronitride, 1152, 1172. --- compounds, organic, 875. - dilatation of, and its change of volume at the melting point, 7.

and iron ores, 528, 529. estimation of, in pig iron, 912. --- poisoning, the urine in a case of, 650. - precipitation of, from solutions of iron and steel, 911. - trifluoride, action of fluorine on, 12. Phosphorylphenylhydrazide, 1325. - thio-, 1326. Phosphoryltolylhydrazide, 1325. Phosphotungstic acids, 1160. Photometry, colour-, Proc., 1891, 150. Phthalamidones, 1248. Phthalic acid, reduction products of, 1211.Physical phenomena at very low temperatures, 1138. Physiological action and chemical constitution of aromatic compounds, relation between, 366. - — of calcium β-naphthol-asulphonate, 1116. - of camphors and of their compounds with chloral, 227. - - of choline, neurine, and allied compounds, 905. - - of dinitrobenzene, 366. - - of gallie and tannic acids, 904. - of impure chloroform, 745. - of ketones and acetoximes, of nickel carbon oxide, 365.
of pentoses, 1506.
of quinone and quinone derivatives, 1115. — of sulphonal, 1507.
— of sulphones, 153. — — of strontium salts, 227. ---- of triazobe zene, benzamide, a-acetonaphthalide, and ethyl α-naphthylazoacetoacetate, 366. - - of trimethylamine, 366. Physiological oxidation, 1018. Phytosterin, 1294. Picea vulgaris, resin from, 205. Picene, 623. Picoline, a-, preparation of a- and \beta-pyridyllactic acids from, 75. - dichloro-, Trans., 725. - hydrogen diaminechromium thiocyanate, 1001. Pierie acid, bromination of, 156. Picroaconitine, 1254. Picrotin, action of hydriodic acid and phosphorus on, 349. Picrotoxic acid, 349. Picrylmetachlorazobenzene, 454. Picrylmetachlorophenylhydrazine, 454. Pigs fed on corn cockle, metabolism in, Ĭ018. 5 s 2

Pillijanine, 894. Pilocarpine, action of, on the excretion of milk, 365. - hydrogen diaminechromium thioevanate, 1901. Pimelic acid, derivatives of, 428. - dissociation constant of. TRANS., 700. thermochemistry of, 1041. ---- anhydride, dihydrazido-, 435. Pinacone, thio-, 1317. Pineapple juice, ferments in, 650. Pinene, constitution of, 865, 997. Pinenenitrolallylamine, 998. Pinenenitrolamylamine, 998. Pinenenitrolbenzylamine, 998. Pinenenitrolpropylamine, 998. Pinna squamosa, ash of the blood of, blood of, 649. Pinnaglobin, a new globulin, 1016. Pinone glycol and its derivatives, 998. Pinus abies, terpenes from the resin of, 625. - laricio, resin from, 204. —— sylvestris, pollen of, 232. Pinylamine, 996. Pinylearbamide, 997. Piperazine, 210. dichloro-, 211.
Piperidine and furfuraldehyde, condensation of, 1452. - argento-salts, 1483. ----- chloriodide, 1357. —— derivatives of, oxidation of, 354. —— oxidation of, 1104. - oxidation of, by hydrogen peroxide, 1484. synthesis of, 717. ---- thiocyanate, 1110. Piperidine-bases of the β -series, 628. Piperidinecarboxylic acids, 1486. Piperonalamidoxime, 318. Piperonaldoxime, 318. Piperonalonitrile, 318. Piperylacetoguanamine, 736. Piperylbiguanide, 735Piperylformoguanamine, 735. Pipette for weighing fuming liquids, 13. gas-, improved, 1374. - improved for gas absorptions, 1124.Pisum arvense, composition of, 522. Plant food, sodium as a, 1508. Plant-cells, green, nutrition of, with for maldehyde, 1259. Plants, absorption and digestion of fat oils by, 1118. - assimilation of free nitrogen by, 367, 370, 378, 523.

-- direct absorption of ammoniacal

salts by, 229.

1261.- fixation of free nitrogen by, 1021. - gum in, which yields xylose on saccharification, 1371. - influence of carbohydrates on the accumulation of asparagine in, 91. occurrence of guanidine in, 908. - presence and function of phloroglucinol in, 1120. respiration of, when injured under lessened oxygen tension, 1259. — sodium chloride in, 651. Plasma and serum, 1113. Platinic bromide and its compounds, heat of formation of, 3. chloride, testing the purity of, 1526. Platinoselenostannates, 282. Platinothiocyanates, 286. - of the alkaloids and amines, 287. Platinous chloride, Trans., 445. - use of, as a source of chlorine, Trans., 445. Platinum, absorption of oxygen by, 943. iodonitro- and bromonitro-compounds of, 280. lowering of the freezing point of bismuth by, Trans., 896. lowering of the freezing point of cadmium by, Trans., 901. - lowering of the freezing point of lead by, Trans., 909. — nitrogen compounds of, 1283. - occlusion of hydrogen by, 567. --- pure, preparation and assaying of, 789. - tetrachloride, anhydrous, TRANS., 422 thiocyanate, 286. Platodipyridine bromide, 353. - chloride, 352*.* Platosemipyridine chloride, 352. Platosopyridine chloride, 352. — dibromide, 353.

Plessite from the Welland meteoric iron, 24. Pneumonia, ptomaine of, 1258. Poisons, vegetable, influence of, on the germination of seeds, 228. Polarisation, galvanic, at small electrodes, 759.
Pollen of *Pinus sylvestris*, 232. Polydymite, 124. Polymethylenes and naphthenes, 1310. Polythionates, Proc., 1892, 91. Potassammonium, reaction of, on metals, Potassium acetate solutions, electrolysis of, Trans., 10. - amalgam, 275.

Plants, fat-decomposing ferments in,

- Potassium and thallium chlorates, solubility of mixed crystals of, 266. — bismuth chloride, 788. ——— bismuthate, 414. ---- bromide, action of sulphuric acid on, Trans., 95, 101. --- calcium thiosulphate, 12. --- chlorate and iodine, interaction of, TRANS., 925. --- chromosulphate, 784. --- citrates, 149. ferricyanide, estimation of, 526. use of, in gasometry, 536.
 volumetric analyses by means of, 1527. ferrocyanide and ferricyanide, use of, in analysis, 1129. - --- volumetric analyses by means of, 1527. - fluoroxyhypovanadate, 787. —— fluoroxyvanadate, 786. --- hydrogen tartrate, use of, for titrating standard acids and alkalis, - imidosulphonate, Trans., 952. - iodide, estimation of iodates in, — lead iodides and bromide, 780. — manganese chloride, 781. manganites, hydrated, 569. --- nitrosoplati-iodide, 281. palladiochloronitrite, 1284. permanganate solution, stability of, 1524. - phosphotungstates, 1160. – platibromonitrite, 1284. - platichloromtrite, 1284. – platidichloronitrite, 1284. - platinoselenostannate, 281. - platinothiocyanate, 286. - platinum thiostannate, reduction of, 944. platipentachloronitrite, 1284. platipentiodonitrite, 1284. platitetrabromonitrite, 1284. — platitetriodonitrite, 281, 1284. platitribromonitrite, 1284. — platitrichloronitrite, 1284. platobromonitrite, 281, 1284. --- platochloronitrite, 1283. platodibromonitrite, 1284. platodichloronitrite, 1284. — platodi-iodonitrite, 1284. — sodium hydrogen imidosulphonate nitrate, Trans., 964. - spectroscopic detection and estimation of, 913. - stannochlorides, 785. — strontium thiosulphate, 13. ---- thioplatinosate, 944. - tricarballylates and their heats of formation, 762.
- Potassium-nepheline, artificial formation of, 1286. Potatoes, cooked, composition TRANS., 227. Potential contact, differences of, 553. - differences of, at the surfaces of contact of very dilute solutions, 671. Præsodymium, emission spectrum of, 2. Precipitates, apparatus for washing, 1513.Prehnitene, bromo-, action of sulphuric acid on, 968. - mono- and dichloro-, 967. Pressure and specific volume of saturated vapours, 263. - influence of, on the expansion of water by heat, 1382. - of saturated water vapour, 396. ---- unequal, equilibrium of chemical systems under, 1148. Propaldehyde, action of zinc and ethyl chloracetate on, 1300. condensation of, with aniline, 1191. - dibrom-, 809. Propaldehydeaniline, 1191. Propane, 1: 3-dinitro-, 1061, 1415. – nitrotribromo-, 1064. ---- sodiodinitro-, 1061. ---- terrabromodinitro-, 1062. Propaneparadisazoanisoil, dinitro-, 1062. Propanedisazobenzene, dinitro-, 1062. Propanedisazotoluene, dinitro-, 1062. Propargylamine, derivatives of, 30. Propargyldithiocarbamic acid, 30. Propargylic acid diiodide, 431. Propargylphenylcarbamide, 31. Propenyldimethylapionol, 1315. Propenylparadibromobenzoic acid, para-, 605.Propenylparahomosalicenylazoxime-ωcarboxylic acid, 319. Propiomesitylene, action of hydroxylamine hydrochloride ou, 314. Propionamide, α-diiodo-, 452. Propionamidine nitrate, 951. - nitrite, 53. Propionates, metallic, 140. Propionic acid, a-amido-, 1336. thiocarbamate, 440. acids, β-oximido-, configuration of, Propionohydroxamic acid, 699. Propionyldiorthotolylhydrazine, 843. Propionyldiparatolylhydrazine, 844. Propionyldiphenylhydrazine, 843. Propionylorthotolylhydrazine, 843. Propionylparatolylhydrazine, 844. Propionylpropionic acid and its di-

oximes, 351.

Propoxybenzamide, 595

Propoxybenzonitrile, 595. Propyl alcohol, action of bromine on, 809. vapour tension of, 397. ---- benzenesulphonate, 1220. —— benzoate, γ -amido-, 213. ---- chlorides, chlorination of, 1414. — formate, magnetism of, 672. - hexyl ketone, 35. – phenyl ether, γ -chloro-, 717. Propylacridine, 343. Propylamidoacetic acid, 804. Propylaminenitrobenzamide, y-bromo-, Propylamines and their derivatives, 804. Propylazobenzene, nitro-, 575. Propylbenzamide, γ-bromo-, 212. - γ·chloro-, 213. Propylbenzophenone, para-, 488. - oximes of, 489. Propylcarbamide, 1421. - dibromo-, 30, 578. Propylcinnamylamide, \$\beta\$-bromo-, 215. · γ·bromo-, 215. Propyldithiobiuret, a., 704. Propylene bromide, action of, on the sodium derivatives of ethyl acetoacetate and ethyl benzoylacetate, TRANS., 67. - dibromo-, 420. --- nitro-, 575, 1062. --- nitrobromo-, 1064. - sodionitro-, 1062. Propyleneazobenzene, nitro, 1063. Propyleneazometabromobenzene, nitro-, 1064. Propyleneazopseudocumene, nitro-, 1064. Propylenecarbamide, bromo-, 578. Propyleneglycol, diacetin of, 1163. Propylenemetazobenzoic acid, nitro-, 1064. Propyleneorthazotoluene, nitro-, 1063. Propyleneparazoanisoil, 1064. Propyleneparazophenetoil, nitro-, 1064. Propyleneparazotoluene, nitro-, 1063. Propyl-group, intramolecular change of the, 43. Propylidenaniline, 1191. Propylisoformanilide, 708. Propylisosuccinimide, 701. Propylmetanitrobenzamide, β-bromo-, Propyl-α-naphthylamine, 1338. Propyl-\$-naphthylamine, 1338. Propyloxamic acid, 804. Propylparisopropyltoluene, ortho-, 985. Propylpentenethiocarbamide, symmetri-Propylphenylacetamide, \(\beta\)-bromo-, 214. γ-bromo-, 215. Propylphthalimide, 157.

Propylsuccinimide, 701. Propyltricarballylic acid, 42. Propyltrimethylammonium salts, 949. – bromo-, 950. Proteïd, new, from human blood serum, Proteïds, calorific values of, 4. — colour reactions of, 1036. - in green and etiolated leaves, 520. — of maize, 379, 746, 749. - of the oat kernel, 1120. Protocotoïn, 62. - action of potash and methyl alcohol on, 873. derivatives of, 63, 874. Protoplasm, new albumin from, 86. Prussic acid poisoning, antidote for, Pseudocumene, fluoro-, 968. Pseudocumylparatolylcarbamide, 979. Pseudonicotine oxide, 1010. Pseudopelletierine, 1110. Pseudosolution, TRANS., 148. Pseudothiocyanogen, properties of, 292. Pseudotropine, 1366. Ptomaines of infectious diseases, 1258. Puleone, an isomeride of camphor, Puleonoxime, 627. Pump, Sprengel, automatic replacement of mercury in, 8. Pupin, 1501. Putrefaction of bile, 518. of milk, 1116. Pyrazole-derivatives, 731. formation of, from the dichlorhydrins and tribromhydrin, Pyrazoles, platinum compounds derived from, 885. Pyrazolone-derivatives, constitution of, - synthesis of, 634. Pyrazolones, nomenclature of, 1004. Pyrethrosin, 349. Pyridine, action of chloromethyl alcohol on, 504. - carbonyl bromoplatinite, 352. - chloriodide, 13**56.** – α-chloro-, 209. — chloroplatinite, 352. constitution of, 210. — hydrogen diaminechromium thiocyanate, 1001. platinothiocyanate, 287. Pyridine-bases, action of, on sulphites, - of the eta-series, 628. Pyridinebetaine, preparation of, 1433. Pyridinecarboxylic acids from berberine, 1357.

Pyridine-derivatives, preparation of, Quinidine benzyl salts, 1250. from the lactone of triacetic acid, - compounds of, with hydriodic Trans., 721. acid, 83, 640. Pyridine-like bases in petroleum, 1357. – diethiodide, 1250. Pyridone, a-, 208. —— diethyl salts, 1250. Pyridylaerylic acid, 77. ---- dimethiodide, 1250. Pyridylbromopropionic acid lıydro-—— ethiodide, 1249. — ethobromide, 1249. bromide, β., 77. Pyridyldibromopropionic acid, 77. Pyridylethylene, 77. — methiodide, 1249. Pyridyllactic acid, α-, 76. Pyridyllactic acid, β -, 78. Trans., 787. Pyridyl-w-trichloro-a-hydroxypropane, 81, 83, 640. Pyridyl-a-trichloropropylene, 76. 221, 892. Pyrites, burnt, utilisation of, in the preparation of iron salts, 1281. Pyrocinchonic anhydride, preparation acid, 83, 640. of, 814. Pyrogallaurin, 1470. Pyrogallol, constitution of, 1446. — dibromide, 1012. conversion of gallic acid into, 1314. — dimethiodide, 1363. — derivatives of, 715. ---- homologues of, 1253. - sodium derivatives of, 1313. - hydrochlorides, 514. — thermochemistry of, 764. Pyromucamide, thio-, 831. cyanate, 1001. Pyrophenite from Harstigen mine, - methiodides, 1363. Sweden, 1412. Pyrotartaric acid, normal, 222.thermochemistry of, 1141. in, Trans., 789. Pyroxene, analyses of, 1409. Pyroxene-family, 1408. Quininesulphonic acid, 515. Pyroxenic rock, azure blue, from New Mexico, 1057. Quinisopropyline, 1253. Quinitol, 833. Pyrrodiazole, 637. Pyrrodiazolecarboxylic acid, 636. Pyrrolidine, synthesis of, 131. azine, 49. Pyrroline, determination of the consti---- diisoamyl ether, 1444. tution of homologues of, 74. Pyruvic acid, condensation of, with dicarboxylic acids, 814. dibromo-, action of hydroxylamine on, 815. - hydrazones, Trans., 786. - magnetic rotation of, TRANS., 807, 836. ----- thiophenyllıydrazine, 1326. — anilide and its hydrazone, 1440. - imidochloride, 1440. ---- orthotoluidide, 1441. alkalis on, 878. - γ-amido-, 725.

Q.

Quartz, 1055. Quercitol, thermochemistry of, 764. Quinaldine, \(\beta\)-chloro-, synthesis of, 505. -- synthesis of, 1245. Quinamyline, 1253. Quinazolines, 217. - thio-, new synthesis of, 1495. Quince-juice, a sugar from, 128.

 hydriodo- and its salts, 1364. Quinindole - a - carboxylic acid, ana-, Quinine, action of hydriodic acid on, behaviour of, with methyl iodide, compounds of, with hydriodic conversion of cupreïne into, 1010. --- detection of, in urine, 665. --- hydrogen diaminechromium thio. preparation of homologues of, salts, appearance of fluorescence Quinol, chlorotribromo-, Trans., 592. compound of, with phenylhydr-— metachlorobromo-, Trans., 562. —— metadibromo-, Trans., 562. --- metadichlorobromo-, TRANS., 567. --- metadichlorodibromo-, Trans., — paradichlorobromo-, Trans , 565. --- sodium compounds of, 1184, 1185. - thermochemistry of, 764. trichlorobromo-, TRANS., 593. — trinitro-, derivatives of, 314. Quinoline alkyl iodides, action — ana-amido-, Trans., 785. — γ-bromo-, 630, 875. ---- chloriodide, 1357. --- ethiodide, oxidation of, 730. --- hydrogen diaminechromium thiocyanate, 1001. methyl hydroxide, oxidation of, 729. - nitration of, TRANS., 782. Quinoline-derivatives, appearance colour in, TRANS., 789.

Quinoline-derivatives, synthesis of, by means of alkyl acetoacetates, 78.

Quinoline-group, attempted synthesis of a nitramine of, 725.

Quinolinehydrazine, ana-, TRANS., 784. Quinolinehydrazines, 212.

Quinolinemethylium alkyl oxides, nitrobromo-, 881.

- hydroxide, bromo- and nitro-derivatives of, 880, 881.

Quinolinemethylpyrazolone, ana., 788. Quinoline-a-phenylsulphonic acids, 1003

Quinolines, amido-, 1488.

— hydrazines of, Trans., 782. Quinolinesemicarbazide, ana., Trans.,

786. Quinoline-series, ketones of the, 1488.

quaternary ammonium bases of, 1358.

Quinolmetachlorobromo-, chlorination of, Trans., 578.

Quinone, action of ethyl acetoacetate on, 608.

and its derivatives, physiological action of, 1115.

---- chlorotribromo-, TRANS., 590.

halogen derivatives of, TRANS., 558, 589.

isomeric change in the halogen derivatives of, TRANS., 558.

metachlorobromo-, TRANS., 562.

— metadibromo-, TRANS., 561. — metadichloro-, TRANS., 559.

— metadichlorobromo-, Trans., 566.
— metadichlorodibromo-, Trans., 578.

---- paradichloro-, Trans., 558.

— bromination of, Thans, 572.
— paradichlorobromo-, Thans., 563.
— paradichlorodibromo-, Thans.,

572.

trichlorobromo-, Thans., 592.

Quinonehæmatin, 1115.

Quinoneoxime acetate, 1457.

- benzoate, 1457.

—— benzoxide, 1457.

---- ethers, 1456. ---- ethoxide, 1457.

ethoxide, 1457.
 methoxide, 1456.

Quinones, action of bleaching powder and of hypochlorous acid on, 720, 859, 970.

Quinonimides, formation of, from amidoazo-compounds, 1476.

Quinopropyline, 1253. Quinoxazines, 887.

Quinoxazones, 887.

R.

Rabbits, hydrophobic, catechol in the urine of, 1115.

Racemic acid solutions, sp. gr. of, 964. Radicles, substituted alcohol, directly united with carbon or with nitrogen,

characteristic difference between, 106. Radish, cooked, composition of, TRANS., 227

quantity of starch in the tubercles of the, 92.

Raffinose, estimation of, in vegetable products, 249.

- precipitation of, by ammoniacal lead acetate, 1294.

— preparation of, from molasses, 422. Rain as a source of nitrogen for vegetation, 233.

— water, ammonia in, 381, 909.

Ramie plant, composition of, 1511. Reaction, velocity of. See Velocity.

Realgar, analysis of, 657.

— from the Yellowstone National Park, 283.

Rectorite, 22.

Refraction and dispersion of sodium chlorate, 1.

— molecular, of nitrogen compounds, 933.

——— of solid chemical compounds in their solutions, 929.

- of sulphines, 34.

Refractive index, density, molecular weight, and diathermanous power of a substance, relation between, 1.
—— indices and compressibility of liquids, relations between, 669.

— of saline solutions, 929.

— power of certain organic compounds at different temperatures, Trans., 287.

powers of isocyanides and nitriles, 757.

Resazurin, formula of, 164.

Resin, detection of, in bees'-wax, 923.

of Pinus abies, terpenes from, 625.
 oil, detection of, in terebenthene, 923.

Resins from Pinus laricio and Picea vulgaris, 204.

--- natural, 204.

-— of Ficus rubiginosa and F. macrophylla, Trans., 916.

Resorcenylamidoxime, β -, 317.

Resorcinol diethyl ether, action of nitrous acid on, 44.

—— ethyl ether, nitroso-, 45.

—— ethyl ether, nitroso-, 44. —— heptachloro-, compounds derived

from the so-called, 1186.
——sodium compounds of, 1184, 1185.

Resorcinol, tetrachloro-, 1462.

- thermochemistry of, 764.

Resorcinol-blue, Weselsky's, synthesis of, 163.

Resorcinoldisazobenzene, 977.

symmetrical, 977.

Resorcinyl orthacetate, 309.

Resorcylaldoxime, β -, 317.

Resorcyldialdoxime, 317.

Resorcylonitrile, \$\beta\$- 317.

Respiration, air vitiated by, 1502.

apparatus, 1257.

---- of plants under lessened oxygen tension and when injured, 1259.

Respiratory value of hæmocyanin, 1370. Retiform tissue, 1113.

Retinite, 573.

Rhamnolactone, polarisation phenomena of, 1341.

Rhamnonic acid, polarisation phenomena of, 1431.

Rhamnose from frangulin, TRANS., 7.

— multirotation of, 1420. — thermochemistry of, 763.

Rhamnus prushiana, cascarin from, 1483. Rhodeochromium salts, 782.

Rhodinaldehyde, 203.

Rhodinol, 203, 625.

Rhodinolic acid, 203.

Rhodium-bases, constitution of, 783.

Rhodosochromium salts, 782.

Rhyolites, minerals in hollow spherulites of, 23.

Ribonic acid, 438.

Ribose and its derivatives, 439.

Rice, effect of excessive liming on the growth of, 94.

Ricinelaïdic acid, oxidation of, 1304.

Ricinoleïc acid, oxidation of, 1304.

Riebeckite from Michigan, 793.

Rings, closed, hydrogenation of, 1040.

– nomenclature of, Proc., 1892, 127.

Rock of the Jiwaara, in Finland, 1058. Rocks, acid, reproduction of, 23.

Rock-salt from Torda and from Vizakna,

Rosaniline, formation of, 340. Rose oil, German and Turkish, 203, 625.

Rosin, estimation of, in its mixtures with fatty acids, 389, 546.

- oil, detection of, in fatty and mineral oils, 548.

Rotation, magnetic, of dissolved salts, Proc., 1892, 12.

Rotatory power, laws of, and stereo-chemistry, 758, 759.

 of diacetyltartaric-derivatives, 669.

Rubbadin, 1076.

action of nitric acid on, 1077.

Rubbadin, action of sulphuric acid on, 1077.

Rubidium antimony chlorides, 788.

—— bismuth chlorides, 789.

- compounds, extraction of, from carnallite, 1395.

- manganese chloride, 781.

Rubidium-carnallite, 1395.

Ruby from Burma, 1055.

Rumpfite, from Upper Styria, 417.

Ruthenium chloride, 688.

- hydroxychloride, 688. oxides, saline compounds of the lower with the higher, 282.

— peroxide, action of light on, 282.

S.

Sabella, ash of the blood of, 1256. Saccharin, specific rotatory power of,

thermochemistry of, 763.

Safrole, oxidation products of, 46, 310. Salicylaldehyde, action of acetic chloride on chloro-, bromo-, and nitro-derivatives of, 1458.

- ethylation of, 57.

- reduction of, by zinc-dust and acetic acid, 168.

Salicyldiureïde, action of ethyl acetoacetate on, 56.

Salicylic acid, action of heat on, 1208.

- - compound of, with phenylhydrazone, 49.

- condensation of nitrobenzaldehydes with, 621.

- --- separation of, from benzoic acid, 1532.

Saline hydrates, formation of, at high temperatures, 119.

Salsify, cooked, composition of, Trans., 227.

Salt, solution of a, in an indifferent salt solution and of a gas, analogies between, 397.

-- solutions, aqueous, viscosity of,

- --- boiling, determination of the temperature of the steam arising from, Trans., 495.

— compressibility of, 766.
— electrical behaviour of metals in, 393.

Salts, capillary constants of, at their melting points, 7.

- changes of volume in solutions of, 766.

- coloured, absorbent power of, and electrolytic dissociation, 757.

- determination of the electrolytic

dissociation of, by means of solubility experiments, 1143.

Salts, dissolved, magnetic rotation of, Proc., 1892, 12.

double, solubility of, 1145.

- ethereal, normal isomeric, of the fatty series, calculation of the boiling points of, 260.

- formation of layers in solutions of, in mixtures of water and organic liquids, 1146.

- heat of dissolution of, in water, 676.

- heat of formation of, in alcoholic solution, 262.

- metallic, electromotive forces of,

- organic liquids as solvents for,

- mutual solubility of, in water, 8, 264.

- solubility curves of pairs of, 1384. state of, in solution, 397.

Samarium, spectra of, 780.

Samarskite from Colorado, 416.

Sand, siliceous, of Monte Soratte, 23.

Sandal wood, essence of, adulteration of, 1379.

Sandmeyer's reaction, use of sodium hypophosphite in, 305.

Santinic acid, 871. Santonic acid, 1352.

oxidation of, 1353.
 oxime of, 1352.

Santonin, derivatives of, 869.

Santoninamine, 869.

Santonine, detection and estimation of,

Saponification by sodium ethoxide, 139. Saponins, 350.

Sapotin, 724.

Sapotiretin, 725.

Sapotoxin from Agrostemma githago,

Scarlet runners, cooked, composition of, Trans., 227.

Schiff's bases, 1189.

Scopolamine, 1255, 1366, 1498.

Sea-kale, cooked, composition of, TRANS., 227.

Sebacamide, 1180.

Sebacic acid, derivatives of, 1180.

Seeds, influence of vegetable poisons on the germination of, 228.

Selenium, allotropic states of, 405.

Semithiocarbazides, di-substituted, Trans., 1012.

Sepia officinalis, blood of, 648.

Serpentine rock from Borzanasca, 1058. Serum and plasma, 1113.

- human blood, new proteïd from, 224.

Serum, toxicity of 228.

Sesame oil, detection of, in olive oil, 1133.

Silicates, action of ammonium chloride at its dissociation temperature on, 772.

- fractional analysis of, 945.

Silicic acid, colloidal solutions TRANS., 154.

 estimation of, in fluorides, 1127, 1128.

Silicon carbide, 1050.

- compounds, Trans., 453.

- condition of, in cast iron, 19.

- estimation of, in aluminium, 1130.

- graphitoïdal, reducing action of, 115.

 tetrachloride, action of, on substituted phenylamines, TRANS., 453.

- reactions of, 1273.

--- thiochloride, 404. Silk, nitrated, 1111.

— rotatory power of, 254, 645.

- specific gravity of, 1036.

- tissue, detection of vegetable fibre in, 667.

Silver, absorption of oxygen by, 943. --- acetate, action of iodine on, 1301.

--- dry distillation of, 37.

- acetylide, 1416; Proc., 1892, 109.

- action of chlorine and of bromine on, 118.

— action of nitric acid on, 1403. — allotropic, 15, 116, 405.

---- and lead, separation of, 1522.

--- barium phosphotungstate, 1160.

---- blue, 15.

--- caproate, action of iodine on, 1301.

chloride, action of light on, 775; TRANS., 728.

- - solution of, in aqueous ammonia, 1154.

— colloïdal, 117, 941.

- pure, preparation of, 775.

— electrolytic detection of, 541.

— electrolytic separation of, from osmium, 920.

estimation of, by means of hydroxylamine hydrochloride, 662.

estimation of small quantities of, in base metals, 1525.

- hydrosulphide, Trans., 132.

- imidosulphonates, Trans., 974.

— lowering of the freezing point of bismuth by, TRANS., 895.

- lowering of the freezing point of cadmium by, TRANS., 900.

- lowering of the freezing point of lead by, TRANS., 907.

- Silver nitride, 112.
- nitrosilicate, 684.
- -- ore, new, 1404.
- --- organosol of, 775.
- permanganate, decomposition of, 942.
- permolybdate, 1160.
- phenylacetylide, 831.
- salts, compounds of thiourea with, TRANS., 249.
- of fatty acids, dry distillation of, 38, 293, 811.
- organic, dry distillation of, 293.
- slags, estimation of bismuth in, 919.
- —— sulphite, 684.
- zinc, and lead, separation of, in galena and blende, 1378.
- Silver-cadmium alloy, analysis Trans., 913.
- Sinapanpropionic acid, 441.
- Siphon for hot liquids or for those evolving gases or vapours, 270.
- Slag, estimation of, in wrought iron, Trans., 551.
- Slags, estimation of phosphoric acid in,
- silver, estimation of bismuth in, 919.
- Soap analysis, 550.
- estimation of combined alkali in,
- Sodammonium, action of, on metals, 275, 773.
- Sodium, action of, on chromic fluoride, 19.
- alloys of, 773.
- --- amalgam, 275.
- ammonium imidosulphonate, Trans., 961.
- and tin, alloy of, 572.
- as a plant food, 1508.
- bromide, action of sulphuric acid on, TRANS., 101, 102.
- carbonate and sodium hydrogen carbonate, solubility of, in solutions of sodium chloride, 116.
- chlorate, refraction and dispersion
- chloride, cryoscopy of dilute solutions of, 1045.
- in plants, 651.
 influence of, on nitrogenous excretion, 904.
- --- measurement of the vapour pressures of solutions of, Thans., 773.
- citrates, 149.
- ethoxide, saponification by, 139.
- ethylthiosulphate, preparation and properties of, 799.

- Sodium ferrinitrosonaphtholsulphonate,
- ferrite, hydrated, dehydrating action of glycerol on, 119.
- fluoroxyvanadate, 786.
- hydrogen sulphide, action of iodine on, 681.
- hypophosphite, use of, in Sandmeyer's reaction, 305.
- imidosulphonates, Trans., 954.
- isopropoxide, 691.
- thermochemistry of, 674.
- lowering of the freezing point of bismuth when alloyed with, TRANS.,
- lowering of the freezing point of cadmium by, Trans., 897.
- lowering of the freezing point of lead by, Trans., 904.
- nitride, 112.
- nitrite, analysis of, 1029.
- --- permolybdate, 1160.
- ---- platinoselenostannate, 282.
- separation of, from mercury and phosphoric and arsenic acids, 530.
- stannibromide, 121.
- sulphate, action of carbon on, in presence of silica, 565.
- - boiling point of a solution of, Proc., 1892, 94.
- solubility of, 398.
- thiosulphate, change proceeding in an acidified solution of, where the products of change are retained in the system, Trans., 176.
- Soil, absorption of oxyhydrogen gas by,
- arable, kaolin in, 1026.
- estimation of phosphoric acid in, 750.
- influence of, on the assimilation of
- free nitrogen by plants, 372.

 influence of the nature of, on vegetation, 1121.
- inoculation, experiments on, 1512. - loss of nitrogen in the decomposition of nitrogenous matters in the. $\bar{3}74.$
- phosphoric acid in, 233, 750.
- presence of boric acid in the products of, 93.
- vegetable, estimation of sulphur in, and the forms in which it is present, 656.
- spontaneous oxidation of, 655.
- the phosphoric acid of, 233, 750. Soils, action of lime on, 94.
- arable, estimation of kaolin in, 1031.
- fixation of atmospheric nitrogen by, 522.

Soils, fallow, influence of clay and or-Solutions, measurement of the vapour ganic nitrogen in, on the absorption pressures of, Trans., 769. of atmospheric nitrogen, the reten- molecular refraction of, 929. tion of nitrogen, and nitrification, of a gas and of a salt in an indifferent salt solution, analogies be- inorganic substances in, 1513. tween, 397. Solanaceæ, alkaloïds of, 231. of salts, changes of volume in, 766. Solanum nigrum, alkaloids of, 232. -- in mixtures of water and tuberosum, alkaloïds of, 232. organic liquids, formation of layers in, Solubility curve, theory of the, 559. curves of pairs of salts, 1384. of some metallic chlorides, physical — mutual, of salts in water, 8, 264. properties of, Trans., 339. —— of double compounds, 1047, 1385. — partially miscible, 1046. - of double salts, 1145. ----- saline, compressibility of, 766. - - refractive indices of, 929. —— of gases in water, 107, 271. — of mixed crystals, 265, 560. — temperature of steam arising Solution, alteration of the conductivity from, Trans., 495. of, by addition of a non-electrolyte, saturated, 1047. ---- stochiometry of, 1382. - and pseudo-solution, TRANS., 148. - strong, and the dissociation hyposuspension, connection bethesis, 108. tween, Trans., 151, 165. ---- sugar, sp. gr. of, 935. - law of thermodynamical coinci---- theory of, 1045. dence and its application to the - very dilute, determination of the theory of, 557. freezing points of, 935. - potential differences at — nature of, 108. the surface of contact of, 671. - passage of substances in, through Solvents, behaviour of optically active mineral filters and capillary tubes, substances in mixtures of two, 1137. - state of salts in, 397. Sorbinose, thermochemistry of, 763. —— the new theories of, 264. Sorbitol, compounds of, with molybdic --- theory of residual chemical affinity acid, 422. as an explanation of the physical - occurrence of, in the fruit of the nature of, 559. cherry laurel, 908. Solutions, a new property of certain, Sparteine, 1362. TRANS., 160. Specific gravities of aqueous solutions, - application of thermodynamics to, - gravity of gases, determination of, - aqueous, action at a distance of 1267. water vapour on, 936. — of sugar solutions, 935.
— relation of E.M.F. to, 257. - diffusion in, 1265.
- sılt, viscosity of, 1044.
- specific gravities of, 765.
- cane-sugar, cryoscopy of, 109, 678, Specific heat of aluminium, 673. - of liquids at temperatures above the boiling point, 761. - of tne diamond, 761. - heats of liquids, calculation of, 2. chemical equilibrium in, 1146. ---- colloïdal, nature of, 766. Specific inductive capacity, relation of, - - pedetic motion in relation to, to latent heat of evaporation, 258. Proc., 1892, 17. Specific rotatory power of galactonic dilute, applications of gaseous laws acid and galactonolactone, 1432. - of gluconic acid and to, 935. gluconolactone, 1432. - -- cryoscopic behaviour of, 8, - of invert sugar and of 678, 1045. - - existence of acid or basic salts dextrose obtained from cane sugar by of monobasic acids in, 110. means of invertase, Trans., 405. - - of rhamnonic acid and - of cane sugar, freezing points of, 678, 1046. rhamnolactone, 1431. - isohydric and non-isohydric, of of rhamnose and the acids, velocity of reaction in mixtures saccharins, 1420. of tartaric acid and its

salts, 1308.

— of xylose, 1420.

- measurement of the osmotic pres-

sure of, 556.

Specific volume and pressure of saturated vapours, 263.

Spectra, absorption, of thin metallic films, 1037.

emission, of neodymium and præsodymium oxides and of luminous solids containing neodymium, 2.

- of samarium, 780.

Spectroscopic detection and estimation of potassium, 913.

Spectrum, absorption, of hæmatin, sensitiveness of, 1369.

—— of gallium, 930.
—— of hydrogen, Hasselberg's second or compound, 1381.

Spermine, supposed reaction of, 1300.

Spessartine from Virginia, 1411.

Spinach, cooked, composition of, Trans.,

Spirits, analysis of, 387.

estimation of fusel oil in, 543.

— examination of, for secondary constituents, 244.

 of wine, detection of higher alcohols in, 1379.

Spring, hot mineral, at Finca Huracato, Salta, Argentine Republic, 574. Stannibromides, 121.

Stannic acid, a-ortho-, 412.

Starch, colloïdal solutions of, Trans.,

 combination of iodine with, 801. ---- conversion of, into amyl alcohol by a bacterium, 90.

— digestion of, by dogs, 516.

- fixation of iodine by, 578.

- in the fungus Boletus pachypus, 230.

--- iodide of, 578, 801, 1171.

- product of the oxidation of, 1171.

- quantity of, in the tubercles of the radish, 92.

thermochemistry of, 764.

Steam arising from boiling salt solutions, temperature of, Trans., 495.

Stearic acid, action of bromine on,

Stearolic acid, diiodo-, 470.

– phenylhydrazide, 1428.

Steel, direct estimation of aluminium in,

estimation of carbon in, 913.

— estimation of chromium in, 538. — estimation of manganese in, 916,

estimation of nitrogen in, 237.

 estimation of phosphorus in, 528, 529, 911.

 estimation of sulphur in, 382. — estimation of tungsten in, 539.

Stereochemical models of organic molecules, 679.

Stereochemistry and the laws of rotatory power, 758, 759.

- and the oximes, 50.

— of diacetyltartaric acid, 758, 759. Stilbene, formation of, from the polymeric thiobenzaldehyde, 184.

paradinitrorthodichloro-, 444.
substitution products of, 718.

Stilbene-series, isomeric change in, 1224.

Stomach, estimation of free hydrochloric acid in the. 236, 1125.

Stomach-contents, estimation of peptones in, 1136.

Straw, aërobic nitrate-reducing ferment in, 12**5**9.

Stromeyerite from California, 1407.

Strontium and calcium, separation of,

- separation of, as chromates, 914.

- barium, and calcium, separation of,

 carbonate, action of potassium sulphate on, 1276.

– chloride, solubility of, 398.

- chromate, solubility of, in dilute alcohol, 914.

--- nitride, 566, 776.

—— phosphates, 1156.

— potassium thiosulphate, 13.

— salts, physiological action of, 227. pure, preparation of, 1277.

- removal of barium from, 776.

-tartrate, behaviour of, with plastered wines, 93.

volumetric estimation of, 1521.

Strychnine, 1012.

- hydrogen diaminechromium thiocyanate, 1001.

Suberic acid, thermochemistry of, 1041. Substitution in the fatty series, 577,

Succinamide, asymmetrical diiodo-, 453. Succinendiamidoxime, formation

Succinic acid, action of hydroxylamine on derivatives of, 136.

– amido- and anilido-derivatives of, 819.

 separation of malic acid from, 1531.

thermochemistry of, 1041.

— diamide, imido-, 820. Succinimidine nitrite, 53.

Succinimidoxime, 136.

Succinylphenylhydrazide, β-, 1494.

Succus entericus, human, 1368.

Sugar, analysis of, 388.

- cane-, freezing points of dilute solutions of, 678, 1046.

- Sugar, cane-, invert sugar and dextrose or levulose, examination of mixtures of, 248.
- 678, 1046.
- solution, 801.
- thermochemistry of, 764.
- ---- disappearance of, from the blood, 363.
- formation of, from peptones in blood, 1502.
- formation of, in the organism, 1113.
- formation of, in the organism when oxygen is deficient, 362.
- from linseed, 1293. from quince juice, 128.
- --- in blood, 743.
- invert, specific rotatory power and cupric reducing power of, Trans., 408.
- milk-, behaviour of, in a diabetic 903.
- thermochemistry of, 764.
 potato-starch-, recognition of, in wine, 922.
- products, estimation of calcium salts in, 1377.
- ---- solutions, sp. gr. of, 935.
- Sugar-cane, healthy and diseased, analyses of, 1372.
- Sugars, aromatic, 1447.
- change of, in the alimentary canal, 902.
- 902. disappearance of the multirotation
- of, in ammoniacal solution, 1419.

 distribution of, in Boletus edulis
 and B. aurantiacus, 519.
- estimation of, by means of Ost's copper solution, 387.
- richer in carbon from glucose, 1164.
- thermochemistry of, 933.
- Sulphanilic acid, transformation of, into sulphanilocarbamic acid in the animal economy, 903.
- Sulphanilocarbamic acid, 904.
- Sulphatammon, TRANS., 949.
- Sulphates, anhydrous, crystallised, 941.
- from California, 1407.
- ---- metallic, efflorescence of, 1271.
- volumetric estimation of, 1377. Sulphide solutions, physical constitution
- of, TRANS., 137.

 Sulphides, inorganic, estimation of sulphur in, 657.
- metallic, action of ferric chloride
- on, 18, 278.
 —— soluble, volumetric estimation of, 1515.
- Sulphines, molecular refraction and dissociation of solutions of, 34.

- Sulphinic acids, tautomerism of, 623. Sulphinic-derivatives and their analogies
- to compounds of organic amines, 34. Sulphite and thiosulphate, action of iodine on a mixture of, Trans., 1083.
- Sulphobenzaldehyde, bromo- and hydroxy-derivatives of, 337.
- Sulphobenzamidinic acid, 714.
- Sulphobenzoic acid, meta-, orthamido-, 333.
- — paramido-, 332. Sulphobenzoic acid, ortho-, nitro-, 479. Sulphobutyric acid, β -, 424.
- Sulphonal, physiological action of 1507.
- Sulphones, chemical and physiological relations of, 153.
- Sulphonic acid, alkyl salts of, 1219.
- acids, anhydrides of, Proc., 1892, 41.
- of, Proc., 1891, 184.
- Proc., 1891, 184.
- Sulphur, action of, on metallic solutions, 770.
- action of, on the alkaline earths, 770.
- action of, on the alkalis, 770.
- action of, on water at 100°, 770.
- and phosphorus, compounds of, 14.
 allotropic states of, 405.
- combustion of, in oxygen, 679.
- estimation of, 382, 1375.
- —— estimation of, in galena, 658.
 —— estimation of, in inorganic sulphides, 657.
- estimation of, in organic substances, 382.
- estimation of, in red copper, 753.
 estimation of, in vegetable soil, 656.
- flowers of, action of sulphurous acid on, Trans., 199.
- forms in which present in vegetable soils, 656.
- from the Yellowstone National Park, 283.
- in iron, estimation of, 1376.
- in steel and iron, estimation of, 382.
- ---- insoluble, 1389.
- —— plastic, formation of, from sulphur vapour, 1150.
- ----tetroxide, 111.
- Sulphuric acid, amides and imides of, 1389.
- and water, contraction on mixing, 271.

- Sulphuric acid, combined, volumetric estimation of, 1515.
- cryoscopic behaviour of weak solutions of, 678.
- - dilute, density and composition of, 271.
- estimation of, 659.
- - formation of, in burning coalgas, 1151, 1374, 1389.
- --- in urine, volumetric estimation of, 1377.
- — solutions, densities of, 271,
- Sulphurous acid, action of, on flowers of sulphur, Trans., 199.
- complex salts of, 564. constit tion of, 1324.
- anhydride, decomposition of, by carbon at high temperatures, 681.
- microscopic detection of, 237. Sulphuryl holoxide, 401.

Superphosphates, analysis of, 1125.

Supersaturation, 398.

Suspension and solution, connection between, Trans., 151, 165.

Syrup, estimation of calcium salts in, 1377.

Т.

Tænite from the Welland meteoric iron, 24.

Talomucic acid, 299.

Talonic acid, 299.

Talose, 299.

Tannic acid, physiological action of,

Tannin analysis, Lowenthal's method of, 667.

- derivatives of. 181.
- —— estimation of, 1135.
- estimation of, in barks, 390.
 - from chestnut wood, 716.

Tariric acid, 582.

- Tartar, estimation of, in sweet wines,
- Tartaric acid and its salts, specific rotatory power of, 1308.
- detection of, in citric acid,
- separation of malic acid from,
- solutions, sp. gr. of, 964. - synthesis of, 822.
- diphenylhydrazide, action of carbonyl chloride on, 511.

Tartarotartaric acid, 965.

Tartranilide, acetyl derivatives of, 54.

- preparation of, 54.

Tartrates, dissociation in dilute solutions of, 588, 1144.

Tartromalic acid, 589.

Tartronic acid, alkali salts of, 675.

- --- thermochemistry of, 675. Tea, analysis of, 926.

Teak, mineral substances in, 230.

Teas, preparation of, 1371.

Teeth, influence of various salts on the composition of, 647.

Tellurium from Faczebaya, 1054.

Temperature and solubility, law of the connection between, 559.

change of the empirical and theoretical isothermals of mixtures of two substances with the, 259.

-influence of, on the refractive power of certain organic compounds, Trans., 287.

- volume and E.M.F., changes of, on mixing electrolytes, 930.

Temperatures, critical, of mixed liquids, 262.

 high, optical measurement of, 761.

- of saturated vapours of various liquids under the same pressure, $11\overline{43}.$

- very low, physical and chemical phenomena at, 1138. Tension, maximum, with which hydro-

gen is set free from solutions by metals, 561.

Teraconic acid, synthesis of, 427. Terbium earth, 1400.

Terebenthene, 624, 625.

detection of resin oil in, 923.

Terecamphene, 624, 635.

Terfâs, relation between truffles and, 654.

Terfezia bouderi, analysis of, 654.

— claveryi, analysis of, 654. — hofazi, analysis of, 654.

Terpene, aextro-, from Russian turpentine, degree of saturation of, 1350.

Terpenes and their derivatives, 200, 347, 623, 625, 722, 1100.

- from the resin of Pinus abies, 625.

Terpin hydrate, action of hydriodic acid on, 867.

from eucalyptus oil, 1235. Terpinol hydrate, reduction of, 1351. Tetrabenzoyloxamide, 1084.

Tetrabenzylcarbamide, 1083.

Tetrabenzyltrimethylenetrisulphone. 592.

Tetracetyleuxanthic acid, 1354.

Tetracetylhydrindigotin, 480. Tetracetylpenterythritol, 128.

Tetradecylacetylene, 1163. Tetradymite from Zsupkó and from

Rézbánya, 1054.

Tetrahydrobenzylidene-2: 6-lutidine, 1361.Tetrahydroketoquinoxalines, 886. Tetrahydro-2-methylpyridine, Δ^2 , 1243. Tetrahydro-α-naphthoic acid, 192. Tetrahydro- β -naphthoic acid, 194. Tetrahydronaphthylanisoil, 1445. Tetrahydronaphthylphenol, 1445. Tetrahydrophthalic acid, $cis \Delta^4$ -, 1216. Tetrahydropicoline, Δ^2 -, 1243. Tetrahydropinene, 998. Tetrahydropyrazine, 633. Tetrahydropyridine, 1484. Tetrahydropyridine-derivatives, svnthesis of, and conversion of, into piperidine derivatives, 1243. Tetrahydroquinoline, dinitro-, 726. oxidation of, 1104. Tetrahydroquinoline-derivatives, oxidation of, 355. Tetrahydroquinolylcarbamide, 725. dinitro-, 726. Tetrahydrothioquinazoline, 1496. Tetrahydroxyaurindicarboxylic acid, Tetrahydroxybenzophenone and its derivatives, 1225. Tetraketohexamethylene hydrate, trichloro-, 835. tetrachloro-, 836. — tribromo, 836. Tetralkylammonium iodides, formation of, 133. Tetramethylbenzamidobenzoplienone, action of nitrous acid on, 185. Tetramethylbenzidine, metadiamido-, Tetramethyldiamidoarsenobenzene, Tetramethyldiamidobenzhydrol, condensation of, with xylidine, mesidine, pseudocumidine, isoduridine, prehnidine, 188. Tetramethyldiamidodiphenylmethoxymethylquinolylmethane, 190. Tetramethyldiamidophenylquinolylmethane, 190. Tetramethylene, derivatives of, Trans., diethyl glycol, Trans., 58.
ethyl ketone, Trans., 51. - - sodium hydrogen sulphite compound of, Trans., 53. — ketoxime, Trans., 54.
— methyl ketone, Trans., 47.
— ketoxime, Trans., 49. — phenyl ketone, Trans., 59. - ketoxime, Trans., 61. Tetramethylenecarboxylic acid, bromo-, TRANS., 41.

- dissociation constant of,

TRANS., 705.

Tetramethylenecarboxylic paration of, Trans., 40. acids, melting points of, 1040. - chloride, preparation of, Trans., 41. Tetramethylenedicarboxylic acid, a., dissociation constant of, Trans., 705. - acids, 1306. thermochemistry of, 1041. Tetramethylene-ethylcarbinol, TRANS., Tetramethylene-ethylcarbinyl acetate, TRANS., 56. Tetramethylenemethylearbinol, Trans., Tetramethylenephenylcarbinol, Trans., - polymeride of, Trans., 65. Tetramethylenepropyl bromide, TRANS., - iodide, Trans., 57. Tetramethylorthophenylenediamine, Tetramethyltriamidodiphenylmethoxytolylmethane, 190. Tetramethyltriamidodiphenyltolylmethanes and their derivatives, 187. Tetra-β-naphthylcarbamide, dithio-. Tetraphenylcarbamide, dithio-, 165. - thio-, 165. tetraphenylthiodithiosemicarbazide, 1326. Tetraphenylthiophen, 185. Tetratolylcarbamide, para-, 1083. Tetratolyloxamide, para-, 1084. Tetravinylpyridine, 1483. Tetrazole, 1009. Tetrazoleazodimethylaniline, 1299. Tetrazoleazo-\(\beta\)-naphthylamine, 1299. Tetrazotic acid, amido-, 1299. Tetrethylacetone, 1188. Tetrethyldiamidoarsenobenzene, 1321. Tetrethyleuxanthic acid, 1354. Tetrethyltriamidodiphenyltolylmethane, 189. Tetrethyltrimethylenetrisulphone, 592. Tetrole-nuclei, constitution of, 302. Tetrolic acid, 961. Tetrylenedicarboxylic acetoanhydride, 1307. - acetochloranhydride, 1307. - acid, symmetrical, 1306. Thallium and potassium chlorates, solubility of mixed crystals of, 266. --- chlorochromate, 568. —— chromate, 567. — estimation of, 238. hypophosphate, 403. - lowering of the freezing point of cadmium by, Trans., 903. - potassium chromate, 568.

Thallium sesquioxide, 568. Thallium lead alloy, analyses of, Trans.,

Thaumasite from Kjölland, 1407.

Thermal value of the hydroxyl groups in glycol, 576.

Thermochemistry of bibasic organic acids, 395, 1140.

- of compounds of chlorine with iodine, 1387.

— of dibromomalonic acid, 1140. — of di-, tri-, tetra-, penta-, and hexa-methylene rings, 1041.

of disodium glycol, 421.
of guanidine and nitroguanidine, 1142

— of hydrazine, 933, 1143.

- of hydroxylamine, 1143.

- of malic acid, 260.

---- of monosodium and disodium catechol, 1184. 1185.

— of monosodium mannitol, 800. — of monosodium and disodium resorcinol and quinol, 1185.

of persulphuric acid and its salts, 931.

--- of phenol, 1041.

— of sodium isopropoxide, 674.

---- of sodium pyrogallol, 1313.

---- of sugars, 931.

of tartronic acid, 675.

- of the carbohydrates and polybasic alcohols and phenols, 763.

— of the cinnamic acids, 469.

— of the hydroxybenzenes, 1446.

of the oxime of opianic anhydride,

of the substitution of radicles in union with carbon and nitrogen respectively, 1141.

Thermodynamical coincidence, law of, and its application to the theory of solution, 557.

Thermodynamics, second law of, and its application to chemical phenomena, 3.

Thermoelectric phenomena at the contact of two electrolytes, 1037.

Thetincarboxylic acids, 1433.

Thiacetic anhydride, 300, 581.

Thiamides, action of ethylenediamine on, 1247.

Thiazole, 313.

compounds of, 215.

Thienylisoxazolic acid, 304.

Thienylphenylpyrazole, 304.

Thienylphenylpyrazolic acid, 303.

Thiobiurets, 703.

Thiocarbanates, reactions of, 1318. Thiocarbamide, silver compounds of, 441; Trans., 249.

Thiocarbamides, 702.

VOL. LXII.

action of ethylene bromide on, 466.

Thiocarbamides, aliphatic, action oxidising agents on, 292.

aromatic, action of thiocarbonyl chloride on, 983.

- unsymmetrical, action of acetone and bromacetophenone on, 216.

Thiocarbaniltolyloxamethane, 599.

Thiocarbimides, compounds of, with aldehyde-ammonias, TRANS., 509.

Thiocarbonyl-\beta-dinaphthylthiocarbamide, 984.

Thiocarbonyldiparatolylthiocarbamide,

Thiocarbonylthiocarbanilide, 983.

Thiocyanacetone, 1425, 1426. - estimation of, 1426.

Thiodiphenylcarbamic chloride, 164.

Thiohydantoic acid, action of phenylhydrazine on, 966.

Thiole, 312.

Thionessal, 185.

- substitution products of, 718.

Thionyl chloride and aromatic hydrazones, 1324.

Thiophen mercuric chloride, 828.

nitrile, 831.

- tetrabromo-, oxidation of, 302. Thiophenaldoximes, 1435.

Thiophenantial loxime, 1435.

Thiopherchloropnosphine and its derivatives, 966.

Thiophendicarboxylic acid, $\alpha\beta$ -, 830.

- bromo-, 831.

Thiophendiethylmethylphosphonium iodide, salts, 966.

Thiophendiethylphosphine, 966. Thiophenoxychlorophosphine, 966.

Thiophenphosphinic acid, 966 Thiophenphosphinous acid, 966.

Thiosulphate and sulphite, action of iodine on a mixture of, TRANS., 1083.

— solutions, preservation of, 1514. Thiosulphates, 12, 1418.

Thiosulphonates, aromatic, 990. Thiosulphonic acids, aromatic, 478.

Thiosulphuric acid, decomposition of, Trans., 176.

Thiotolene mercuric chloride, \(\beta\)-, 829.

Thiourea, action of nitrous acid on, Trans., 525.

and ammonium thiocyanate, compound of, 1309.

 compound of silver bromide with, TRANS., 251.

 compound of silver chloride with, TRANS., 252

- compound of silver cyanide with, TRANS., 253.

- compound of silver iodide with, TRANS., 252.

- compound of, with aldehyde-ammonia, TRANS., 510.

Thiourea, compound of, with isovaleraldehyde-ammonia, TRANS., 513. compounds of silver nitrate with, TRANS., 250. · compounds of, with aldehydeammonias, TRANS., 509. properties of, 1309. - silver compounds of, TRANS., 249. Thiouress, Proc., 1892, 96. substituted, isomerism amongst the, TRANS., 536. Thorium and uranous sulphates, isomorphous, 571. Thymol, 1078. refractive power of, at different temperatures, Trans., 305. Thymolglycuronic acid, 1116. Tiglic acid, constitution of, 1304. Tilias, oil from the seeds of, 92. Tin, action of nitric acid on, 1402. - and sodium, alloy of, 572. - antimony, and arsenic, detection of, 918. - separation of, Trans., 421. - bismuth, cadmium, and lead, separation of, 754. · cadmium, and gold, estimation of, in alloys, 1030. - double halogen salts of, 785. estimation of, 1129. - lowering of the freezing point of bismuth by, TRANS., 896. - lowering of the freezing point of cadmium by, TRANS, 901. - lowering of the freezing point of lead by, TRANS., 908. Tin. See also Stannic. Tin-ores, analysis of, 540. Tirmania africana, analysis of, 654. Tissue, retiform, 1113. Tissue-fibrinogens, 646. Titanic oxide, distribution of, on the earth, 791. Titaniferous iron ore from the Fichtelgebirge, 1406. Titanium, decomposition of minerals containing, 664. estimation of, in titanium-aluminium, 1131. - sesquioxide, action of nitric oxide on, 1152. Tolallyl sulphide, 185. Tolane sulphide, 185. Tolenylamidine nitrite, para-, 53. Tolidine, metamidortho, 852. — metanitrortho-, 852. - polymethylene bases from, 1223. Tolidinedisulplionamide, 1468.

Tolidinedisulphonic acid, orthos, 1466.

Tolidinesulphonic acid, 1467.

Tolualanine, nitro-, 1359.

- imidodipara-, 712. Toluene, bromination of, TRANS., 1025. - diamido-, action of formaldeliyde on, 1496. - interaction of bromine and, TRANS., 1023. - 1 : 2 : 5-dichloro-, sulphonation of, TRANS., 1050. - 1 : 3 : 4-dichloro-, sulphonation of, TRANS., 1060. - metachloro-, sulphonation of, TRANS., 1075. orthobromo-, bromination of, TRANS., 1031. orthochloro-, sulphonation of, TRANS., 1072. - orthonitro-, action of chlorine on, in presence of sulphur, 1437. parabromo-, bromination of, TRANS., 1032. - parachloro-, sulphonation of, TRANS., 1078. paramidorthochloro-, 415. refractive power of, at different temperatures, TRANS., 297. - 1 : 3 : 4 : 5-trichloro-, Trans., 1070. Tolueneazocyanocamphors, ortho- and para-, 1343. Toluenediazoacetotoluidide, 459. Toluenehydrazoparacresol, para-, 974. Toluenemetasulphonic acid, orthometadibromo-, TRANS., 1038. Tolueneparasulphonic acid, bromination of the potassium salts of, TRANS., 1027. Toluenes, ortho- and para-bromo-, preparation and properties of, TRANS., 1026, 1027. Toluenesulphonic acid, 1:2:5-dichloro-, derivatives of, TRANS., 1051. - 1:3:4-dichloro-, derivatives of, TRANS., 1061. - hydrolysis of, Trans., 1068. - metachloro-, TRANS., 1075. - --- ortho-, 1:2:5-orthobromo-, TRANS., 1041. 1:2:5-orthochloro-, TRANS., 1040. - orthochloro-, TRANS., 1072. - acids, mono-, di-, and tri-chloro-, TRANS., 1042. ortho- and para-bromo-, TRANS., 1023. - parachloro-, TRANS., 1078. Toluenethiosulphonic acid, reactions of, Toluic acid, meta-, parachloro-, 1201. Toluic acid, ortho-, parabrom-, nitration and bromination of, 1207. Toluic acid, para-, 5:2-amidochloropara-, 172.

Toluamide, imidodiortho-, 712.

Toluic acid, para-, 6: 3-amidochloro-, 173.	and Winther's, constitution of, TRANS.,
2:3-azimido- 177	1036.
3: 2-bromoemoro-, 175.	Toluidobutyric acid, a-ortho-, 1338.
	Toluidobutyric acid, α-para-, 1338.
2:5-diamido-, 176.	Toluidocinnoline, para-, 1494.
3:5-diamido-, 177.	Toluidoisobutyric acid, a-ortho-, 1339.
2.3 dibromo 175	Toluidoisobutyric acid, α-para-, 1339.
2. 5-dibrono-, 175.	
2:0-dloromo-, 173.	Toluidoisobutyric acid, β -para-, 1339.
	Toluidoisobutyric acids, 1339.
2:3-dinitro-, 176.	Toluidopropionic acid, a-para-, 1337.
	Toluidopropionic acid, β-para-, 1343.
2 · 6 · dinitro - 177	
2: 0-dimero-, 177.	Toluonitrile, ortho-, dibrom-, 1208.
3: 5-dinitro-, 177.	Toluonitrile, para-, 2:6-dibromo-, 175.
—— — metachloro-, nitration	3 : 5-dibromo-, 176.
of. 173.	
2:5-nitramido-, 177. 3:5-nitramido-, 178.	6: 2-nitrobromo- 175
2.5 nitramida 178	5.2 nitrochlam 179
3:5-miramino-, 176.	5: 2-mtroemoro-, 172.
	——————————————————————————————————————
3 : 2-nitrobromo-, 175.	Toluyl methyl ketone, parabromometa-,
——————————————————————————————————————	338.
5 · 2-nitrobromo- 174	Toluyldithiocarbamic acids, salts of, 56.
	Toluylenaldehydenitrodimethoxybenz-
0:2-nttrooromo-, 175.	
2:3-nitrocnioro-, 174.	enylorthocarboxylic acid, 1249.
——————————————————————————————————————	Toluylenediamine, ortho-, derivatives of,
——————————————————————————————————————	709.
5:3-nitrochloro-, 174 orthobromo-, nitration	Toluyleneoxamide, 1208.
of, 175.	Toluylenephthalamidone, 1248.
- orthochloro-, nitration	Toluylxylide, ortho-, 491.
of, 172.	Tolyl cyanate, nitro-, 833.
orthonitro-, nitration of,	isocyanide, ortho-, 1441.
176.	para-, 1442.
	mothed butons novel
Toluic acid, 4:1:3-sulphamido-, 1092.	methyl ketone, parabromometa-,
Toluic acids, dibromortho-, 1207, 1208.	1200.
— mitrobromortho-, 1207. — sulphinide, 1092.	parachlorometa-, 1201. ketoxime, parabromometa-,
	ketoxime, parabromometa
Toluidine, commercial, assay of, 925.	1201.
Toluidine, meta-, parachloro-, 1201.	parachlorometa-, 1201.
Toluidine, ortho-, action of benzyl	orthotolylcarbamate, ortho-, 832.
chloride on, 48.	Tolyl-β-alanine, para-, 1343.
and furfuraldehyde, conden-	Tolylazimidobenzene, amidopara-, 1322.
sation of, 1452.	Tolylazoparatolylthiobiazolone, para-,
	512.
	1
chlorotoluene, Trans., 1047.	Tolylazoparatolyl-ψ-thiobiazolone, para-,
conversion of, into di-	512.
chlorotoluene, Trans., 1049.	Tolylazorthotolyldithiobiazolone, ortho-,
- hydrogen diaminechromium	513.
thiocyanate, 1000.	Tolylazorthotolylthiobiazolone, ortho-,
———— influence of nucleal methyl	
	513.
on the properties of, 1319.	Tolylbenzenemetacarboxylic acid, meta-,
Toluidine, para-, chloro-, conversion of,	851.
into chlorotoluene, TRANS., 1058.	Tolylcarbamide, para-, and its deriva-
5 · 2-nitrobromo- 174	tives, 460.
5 : 2-nitrobromo-, 174. 2 : 5-nitrochloro-, 172.	
2.0-introchloro, 172.	Tolyldibenzylcarbamide, para-, 1083.
—— 6: 2-nitrochloro-, 172.	Tolyldifurylnaphthodihydroquinoxal-
6: 3-nitrochloro-, 173.	ine, 1476.
Toluidineazo-a-naphthol, ethyl and	Tolyldimethylthiohydantoin, ortho-
methyl ethers of, 863.	150.
Toluidinemetasulphonic acid, ortho-,	
	Tolyldimethylthiohydantoïn, para-, 150.
metabrom-, Trans., 1037.	Tolyl-β-dimethyl-μ-thiomethylimid-
Toluidines, ortho- and para-, action of	azole, v-ortho-, 153.
benzyl chloride on, 313.	Tolyl-β-dimethyl-μ-thiomethylimid-
Toluidinesulphonic acid, ortho-, Nevile	azole, v-para-, 153.

Tolyldiphenylethohydronaplithazonium hydroxide, 1474.

Tolyldiphenylnaphthodihydroquinoxaline, 1474.

Tolylenedioxamethane, 603.

Tolylenedioxamic acid, 604.

Tolylenedioxamide, 603.

I olylenemalonamide, 600.

Tolyleneoxamide, 599.

Tolylfurfurylcarbamide, ortho-, 43.

Tolylfurfurylthiocarbamide, 43.

Tolylglycocine, ortho-, derivatives of, 1333.

Tolylglycocine, para-, 1335.

and its derivatives, 1335.

Tolylhydantoïn, γ -para-, 828.

Tolylhydrazine phosphenite, para-, 1325. Tolylhydrazinecamphoric acid, para-,

Tolylhydrazone, thionylpara-, 1324.

Tolylhydrazoparatolylthiobiazolone, para-, 512

Tolylhydrazotolyldithiobiazolone, para-, 512.

Tolylhydroxypyrimidinecarboxylic acid, para-, 1008.

Tolylimidocarbonyl chloride, 1441.

Tolylimidodiacetamide, ortho-, 1335.

Tolylimidodiacetic acid, para-, 1336.

— ditoluidide, para-, 1336. Tolylimidodiacetimide, ortho-, 1335.

Tolylimidazole, v-para-, 1329.

Tolylimidazolyl methyl sulphide, 1329. Tolylimidazolyl-μ-mercaptan, ν-para-, 1328.

Tolylisoquinoline, β -para-, 475.

___ a-chloro-, 474.

Tolyl- β -methyl- α -methoxy- μ -thiomethylimidazole, ν -ortho-, 152.

Tolyl-β-methyl-α-methoxy-μ-thiomethylimidazole, ν-para-, 152.

Tolyl-α-methylphthalimide, para-, 608. Tolylmethylthiohydantoïn, ortho-, 150.

Tolylaphthylenediamine, 1476.

Tolylorthazodibenzylamine, para-, 316, 890.

Tolylorthonaphthylenediamine, paraand its anhydro- and thio-derivatives, 1473.

Tolylorthotolylsemithiocarbazide, para-, Trans., 1016.

Tolyloxamethane, amido-, 599.

-- nitro-, 601.

Tolyloxamide, amido-, 602.

---- nitro-, 601.

Tolyloxanilide, amido-, 602.

Tolylparatolylsemithiocarbazide, ortho-, Trans., 1015.

Tolylphenylacetonitrile, 1094.

Tolylphenylketoximes, ortho-, 490.

Tolylphenylsemithiocarbazide, para-, Thans, 1013.

Tolylphthalimide, ortho-, preparation of, 1204.

Tolyltetrahydroketoquinazoline, para-, 1496.

Tolyltetrahydrothioquinazoline, 1496.

Tolylthiocarbazinic orthotolylhydrazide, ortho-, 513.

Tolylthiocarbazinic paratolylhydrazide, para-, 511.

Tolylthiocarbimide-aldehyde-ammonia, ortho-, TRANS., 520.

Tolylthiohydantoin, ortho-, 150.

Tolylurethane, amido., 600, 1203.

—— paramido-, 601. —— paranitro-, 601.

Tomato, cooked, composition of, TRANS., 227.

Tournaline, formula of, 1410.

red, from Siberia, 573.

Toxic action of blood and various tissues, 228.

Toxic principles of Amanita pantherina, 232.

Toxicity of serum, 228.

Transpiration, 1267.

Transportation of solids in a vacuum by the vapours of metals, 1386.

Trees, occurrence of calcium oxalate in the bark of, 1370.Trehalose, detection and extraction of,

545.
—— thermochemistry of, 764.

Triacetic acid, lactone of, preparation of pyridine derivatives from, TRANS., 721.

Triacetin, 289.

Triacetylglycerol, 289.

Triammonium imidosulphonate, anhydrous, Trans., 949.

--- hydrated, Trans., 948.

Triargentic imidosulphonate, TRANS., 974.

Triazobenzene, physiological action of, 366.

Triazole, 735.

Triazolecarboxylic acid, 735.

Triazole-derivatives, 637.

Triazoles, nomenclature of, 889.

Tribenzyl orthothioacetate, 612.

Tribenzylcarbamide, 1083.

Tribenzylpyridine, 1365.

Tribenzylsulphonemethylmethane, 613. Tribenzylsulphonephenylmethane, 613.

Tribromhydrin, symmetrical, formation of, 577.

Tricalcium phosphate, action of carbonic anydride and of ferric hydroxide on, 408.

Tricarballylie acid, dissociation constant of, TRANS., 707. Tricinnamtetra-ureïde, 57. Tricyanides, formation of, from nitriles and acid chlorides, 1183. Triethoxytriphenodioxazine, 158. Triethyl orthothioacetate, 612. Triethylamine platinothiocyanate, 286. Triethylgallic acid, amido-, 716. · dibromo-, 715. - nitro-, 716. Triethylidenecinchonine, 1252. Triethylpyrogallol, amido-, 716. · nitro-, 716. Triethylresorcinol, action of nitrous acid on, 44. Triethylsulphonemethylmethane, 154. Trifolium, analyses of, 522. Trihydroxyaurindicarboxylic acid, 1469. Trihydroxybenzophenone, bromo-, 1225. derivatives of, 1224. ---- nitro-derivatives of, 1225. - sodio-, 1224. Trihydroxyglutaric acid, second inactive, 437. Trihydroxyquinoxaline, 734. Trihydroxystearic acids prepared from ricinoleïc and ricinelaïdic acids, stereochemistry of, 1304. Triketopentamethylene hydrate, dibromo-, 836. tribromo-, 836. -- trichloro∙, 835. Trimethylacetaldehyde, 39. Trimethylacetic acid, solubility of salts Trimethylallylammonium iodide, 1295. Trimethylamine, action of capryl iodide action of isoamyl iodide on, 805. action of isobutyl iodide on, 805. — chloriodide, 1357. — ethylene bromide, 806. – iodide, 808. hydrogen diaminechromium thiocyanate, 1000. physiological action of, 366. platinocyanate, 286. pure, preparation of, 805. Trimethylbenzaldehyde, 329. Trimethylcarbinol, action of bromine on, 809. · sodio-, 1066. Trimethylchlorethylammonium platinochloride, 807 Trimethyldiamidobenzophenone, 185. - nitrosamine of, 185. Trimethyldihydroquinoline, 614. Trimethyldihydroxyethylammonium salts, 807. Trimethylene chlorobromide, action of

aromatic amines and amides on, 1491.

Trimethylene, constitution of, 1163. - iodide, preparation of, 1062. Trimethylenedicarboxylic acids, melting points of, 1040. Trimethylenedisulphonesulphide, 592. di-, and hexabromo-, 593. Trimethylenepolycarboxylic acids. thermochemistry of, 1041. Trimethylenetetracarboxylic acid [1, 1, 2, 2], 1040. Trimethylenetrisulphone, 591. - hexabromo- and tetrachloro-, 592. Trimethylethylidenelactic acid, \(\beta\)-, 38. Trimethylfurfurylammonium iodide, Trimethylgallic acid, nitration of, 716. Trimethylisopropylammonium iodide, 1295.Trimethylpropylammonium iodide,1294. Trimethylsulphine iodide, 300. preparation of, 1422. Trimethylthiohydantoïn, 151. Trimethyl-\mu-thiomethylimidazole, νβ-, Trimethylvinylammonium salts, 806. Triphenyl orthothioacetate, 612. Triphenylbenzene, symmetrical thesis of, 993. Triphenylcarbamide, thio-, 164. Triphenylethophenazonium hydroxide, amido-, 1109 Triphenylguanidine picrate, 950. Triphenyl-γ-hydroxypropylideneacetethylamide, $\alpha\beta\delta$ -, 485. Triphenyl- γ -hydroxypropylidenescetie acid, $\alpha\beta\beta$ -, 484. Triphenylisotriazone, 1471. Triphenylmethane and chloroform, condensation of, 722. preparation of, 719. Triphenylmethane-group, dyes of the, Triphenyl-\$-naphthylcarbamide, 167. - thio-, 165. Triphenylpyrrolone, 1003. Triphenylsulphonebromomethane, 611. Triphenylsulphonechloromethane, 611. Triphenylsulphonemethylmethane, 612. Triphenyltetrahydropyrazine, 634. Triplite from South Dakota, 1406. Trisodium imidosulphonate, TRANS., 958.Trisulphones, 153. formation of, from disulphones, 613, 850. Trithionate, formation of, by the action of iodine on a mixture of sulphite and thiosulphate, Proc., 1892, 91. Tritolylcarbamide, para-, 1083. Tropeïnes, ψ -, 891. Tropine, 358. action of hypochlorous acid on, 1014.

Tropine, constitution of, 1244. Tropine, ψ -, 891.

- atropate, 892.

Tropyl- ψ -tropeïne, 891.

Truffles of Europe, relation between the terfâs or kamés of Africa and Western Asia and the, 654.

Tscheffkinite, analysis of, 23.

Tubes, block support for, 9.

Tungsten dioxide, action of nitric oxide on, 1152.

—— electrolytic separation of gold from, 920.

—— estimation of, in rich alloys and in steel, 539.

Tungstic acid, action of hydrogen peroxide, on, 944.

---- estimation of, 241.

Turkey-red oil, 819.

Turnips, cooked, composition of, Trans., 227.

Turpentine, action of benzoic acid on, 199.

— behaviour of, in mixtures of two solvents, 1137.

--- constitution of, 864.

- detection of, in essences, 386.

---- reaction of, with manganous salts, 386.

U.

Ullmannite from Siegen, 124.
Unsaturated aromatic compounds, action of nitrous acid on, 1198.
Uramidotolyloxamic acid, 602.
Uramidotolyloxamide, 603.
Uraminite, new analyses of, 283.
Uranium oxide, action of nitric oxide on, 1152.
Uranous and thorium sulphates, iso-

morphous, 571. Urea, cryoscopy of dilute solutions of,

1045.

— excretion of, 365.

mechanism of the production of, in the animal organism, 89.

----- oxalate, 1421.

Urea. See also Carbamide. Urethanotolyloxamethane, 601.

Urethanotolyloxamic acid, 602.

Urethanotolyloxamide, 601. Uric acid, estimation of, 546, 1032,

---- excretion of, 365.

formation of, from nucleïn,

formation of, in the blood of mammals, 1257.

Uric acid, influence of hot baths on the excretion of, from the human system, 1503.

Uric acid-group, azines of, 70.

Urine, carbonic anhydride in, 649.
—— detection of albumin in, 667, 928.

detection of hæmatoporphyrin in, 1136.

---- estimation of creatinine in, 1135.

- estimation of gallic acid in, 924.
- estimation of homogentisic acid

in, 925.

ethereal hydrogen sulphates in,

226.

- excretion of nitrogen in, 1503.

--- hæmatoporphyrin in, 649.

-human, estimation of phenols in, 544.

— — normal, reducing agents in,

putrefying, carbohydrates of, 226.

in a case of phosphorus poisoning, 650.

of animals, occurrence of acetyl derivatives in, after the ingestion of aldehydes, 1504.

aldehydes, 1504.

of hydrophobic rabbits, catechol in, 1115.

ın, 1115.

phosphoric acid in, 1115.
 sulphates and ethereal hydrogen sulphates in, during diarrhea, 1505.

volumetric estimation of peptones in, 1264.

volumetric estimation of sulphuric acid in, 1377.

xanthocreatinine in the, 364. Urohæmatoporphyrin, 744. Uvic acid, preparation of, 814.

٧.

Vacuum, transportation of solids in, by the vapours of metals, 1386.

Valeraldehyde, δ -amido-, 1484.

Valeraldehydeaniline, 1193.

Valeric acid, dibromo-, decomposition of, 960.

Valerolactone, bromo-, 960.

— hydrolysis of, 1303. Vanadic acid, action of hydrogen per-

oxide on, 944. Vanillenylamidoxime, 318.

Vanillonitrile, 318.

Vanilloylcarboxylic acid, 64.

Vaporisation, heat of, of a solution, 1382. Vapour densities, determination of, under reduced pressure, 553.

- density, determinations of, 934.

Vapour pressure, apparatus for the indirect determination of, 679.

- --- of aqueous solutions of cobalt chloride, 263.

- of water, 396.

- pressures of solutions, measurement of, Trans., 769.

Vapour tension of homologous compounds, 396.

Vapours, saturated, of various liquids under the same pressure, temperatures

- pressure and specific volume of, 263.

 ${f V}$ egetable amyloïd, 803.

Vegetable marrow, cooked, composition of, TRANS., 227.

Vegetables, cooked, composition of, $ar{ ext{T}}$ rans., $ar{ ext{2}}26$.

- estimation of pentoses in, 247. Vegetation, fixation of free nitrogen

during, 1508. - influence of the nature of the soil

on, 1121.

- of the vine, 908.

rain as a source of nitrogen for, 233. Velocities, relative, of the action of iodine on a mixture of sulphite and thiosulphate, Trans., 1086.

Velocity of decomposition of diazocompounds by water, 768.

of reaction between alcoholic potash and alkyl halides, 399.

- - in mixtures of isohydric and non-isohydric solutions of acids, 936. Veratroïl, dinitro-, 180.

Vermiculites, constitution of, 125.

Vesuvian from Norway, 1408.

Vicia, analyses of, 522.

Vine, origin of the colouring matter of,

vegetation of, 908.

Vinegar, examination of, 251.

Vinyltrimethylammonium salts, bromo-,

Viscosity of aqueous salt solutions, 1044.

of liquids, 1143.

Vitoglycol, 746.

Vitole, 746.

Vivianite from Tamanj, 690.

E.M.F., and temperature, changes of, on mixing electrolytes, 930. - lag, and its bearing on molecular

constitution, 1043. Volumes, Gay Lussac's law of, 1271.

- molecular, of dissolved substances, 1383.

--- of liquid and gaseous mixtures, 935. $\mathbf{Volumes}$. See also Specific volumes, Molecular volumes.

Volumeter, gas-, Proc., 1891, 171.

W.

Water of the lakes of Aiguebelette, Paladru, Nantua, and Sylans, 1061.

Water, composition of, 1271.

-- estimation of dissolved substances in. 920.

estimation of fixed and volatile organic matter in, 921.

estimation of nitrates in, 243.

- estimation of oxygen dissolved in, 98; TRANS., 310.

- expansion of, by heat, 7, 106, 1382. - extraction of the dissolved gases in, 1526.

from the Arctic Ocean, 1287.

- influence of, on nitrogenous excretion, 904.

 influence of temperature on Griess' reaction for nitrites in, 657.

— maximum density of, 7.

— mineral, at Sclafani, 25. — of Monte di Malo, 1287.

--- of crystallisation, 581.

--- rain, ammonia in, 381, 909.

refractive power of, at different temperatures, Trans., 293.

solubility of gases in, 107.

- vapour, saturated, pressure of, 396.

Water-gas, action of, on iron, Proc., 1891, 126.

Water-generator gas, reconversion of heat into chemical energy by production of, 673.

Waters, mineral, alteration of chaly-beate, 1288, 1289.

--- preservation of, 1162.

--- natural, colour standard for, 1527. - of the North Sea on the coasts of Holland, 419.

· subterranean, near Port-Vendres,

Wax, detection of resin in, 923.

---- Japan, sp. gr. of, 428.

- vegetable, assay of bees'-wax for,

white, analysis of, 665.

Weighing, rapid, modified balance for,

Weight, live-, influence of various salts on, 647.

Wheat, growth of, in a sterile siliceous soil, 909.

proteïds and carbohydrates in, 1119.

Willemite from New Jersey, 1411.

Wine, estimation of glycerol in, 1529.

—— estimation of glycerol, astringent acids, and colouring matter in, 246.

Wine, estimation of potato-starch sugar in, 922.

- influence of, on peptic digestion, 87.

- plastered, behaviour of strontium tartrate with, 93.

- presence of boric acid in, 93.

Wine-lees, estimation of cream of tartar in, 1033.

Wines, decolorisation of, 543.

— detection of alum in, 1523.

- sweet, estimation of glycerol in, 1263.

- estimation of tartar in, 1531.

Wolfshergite from the Harz, 124. Wollastonite from Perheniemi, Finland,

Wood, ketones obtained in the dry distillation of, 424.

- sulphite liquor, 802.

Woollen tissue, detection of vegetable fibre in, 667.

X.

Xanthine, presence of, in the horse's liver, 516.

- reaction of, 1534.

Xanthocreatinine in the urine, 364.

Xanthones of the naphthalene and quinoline series, 1098.

 ${f X}$ ylaldiphenylmaleïde, para-, 482. Xylalphthalide, para-, 473.

- nitro-derivatives of, 474.

Xylalphthalimidine, para-, 474.

Xylene, meta-, bromonitro-, 1437. - —— chloronitro-, 1437.

— ---- cyanonitro-, 1437.

— derivatives of, 1437.

— fluoro-, 968. — — fluoronitro-, 1437.

———— iodonitro-, 1437.

Xylenediazopiperidide, nitrometa-, 1437.

Xylenedisulphonic acid, meta-, 1340.

Xylenedisulphonic acid, ortho-, 1341.

 ${f X}$ ylenedisulphonic acids, 1340. Xylenes, action of aluminium chloride

on, 1309. - separation of the, 1134.

Xylenesulphonic acids, meta-, Proc., 1**891**, 189.

Xylidine, meta-, action of benzyl chloride on, 314.

unsymmetrical, action of benzyl chloride on, 1320.

Xylidine, ortho-, chlor-, 1202.

Xylidine zinc chloride, 1455.

Xylitol, 28.

- constitution of, 29.

Xylitol pentanitrate, 29.

Xylose, 28.

constitution of, 29.

- disappearance of the multirotation of, in ammoniacal solution, 1419.

- gum in plants which on saccharifi. cation yield, 380, 1371.

optical properties of, 1420

- physiological action of, 1506.

---- reactions of, 290.

thermochemistry of, 763.

Xylyl methyl ketone, bromopara-, 338.

---- 3-chloro-1 : 2-, 1202. - --- parachlorometa-, 1:2-, 1201.

~ orthotolyl ketone, 491.

Xylylic acid, nitrometa-, 1437.

Xylylfurfurylcarbamide, meta-, 43.

Xylylfurfurylthiocarbamide, meta-, 43.

Xylylimidazole, ν -meta-, 1330.

Xylylimidazolyl-μ-mercaptan, ν-meta-,

Xylylimidazolyl- μ -methyl sulphide, ν meta-, 1330.

Xylylmethylthiohydantoïn [1:3:4-],

Xylylphenylketoximes, 490, 491. Xylylphenylpropionic acid, 849. Xylylphthalimidine, para-, 474.

Y.

Yeast, hydrolytic functions of, Trans., 593, 926.

- velocity of the hydrolytic action of, Trans., 928.

- purification of, 905.

Yeast-cells, effects of varying environment on, Trans., 369.

Yolk of eggs, estimation of fat in, 1134. Yttrium earth, 1400.

z.

Zeïn, 749.

Zinc, action of chlorine and of bromine on, 118.

— action of nitric acid on, 1279.

- action of, on chromic fluoride, 20. - ammonionitrosonaphtholsulphonate, 346.

- and manganese, separation of, 385.

- bromide, boiling point of, 680. - chloride, boiling point of, 680.

- cyanide, formation of, from zinc dust, 1164.

- estimation of, 1129.
- estimation of, by the ferrocyanide process, 915.

- fluorovanadite, 788.

Zinc, fluoroxyhypovanadate, 787.
fluoroxyvanadate, 787.
hydrosulphide, Trans., 130.
lead, and silver, separation of, in
galena and blende, 1378.
lowering of the freezing point of
bismuth by, TRANS., 893.
lowering of the freezing point of
cadmium by, Trans., 899.
lowering of the freezing point of
lead by, Trans., 905.
mercuric cyanide, Trans., 666.

--- thiocyanate, 10.

- Zinc nitrates, basic, 1156.

 orthoborate, 404.
- oxide, action of hydrogen peroxide on, 1278
- separation of manganese from, 537.
- --- volumetric estimation of, 534.
- Zirconium chloride, preparation of, from zircons, 412.
- Zoïsite from Orenburg, 690.